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INDEPENDENT OFFICES AND DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT APPROPRIATIONS FOR 1969

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETIETH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON INDEPENDENT OFFICES AND DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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G. HOMER SKARIN, *Staff Assistant to the Subcommittee*

PART 2

Appalachian Regional Commission
Civil Defense Activities
Emergency Health Activities
Federal Communications Commission
Federal Home Loan Bank Board
General Services Administration
National Aeronautics and Space Administration
Office of Emergency Planning
Office of Telecommunications Management
Securities and Exchange Commission

Printed for the use of the Committee on Appropriations

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INDEPENDENT OFFICES AND DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT APPROPRIATIONS FOR 1969

MONDAY, FEBRUARY 19, 1968.

FEDERAL COMMUNICATIONS COMMISSION

WITNESSES

ROSEL H. HYDE, CHAIRMAN
ROBERT T. BARTLEY, COMMISSIONER
ROBERT E. LEE, COMMISSIONER
KENNETH A. COX, COMMISSIONER
LEE LOEVINGER, COMMISSIONER
NICHOLAS JOHNSON, COMMISSIONER
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GEORGE S. SMITH, CHIEF, BROADCAST BUREAU
WALLACE E. JOHNSON, ASSISTANT CHIEF, BROADCAST BUREAU
RICHARD L. FRANZ, ASSISTANT CHIEF, BROADCAST BUREAU
CURTIS B. PLUMMER, CHIEF, FIELD ENGINEERING BUREAU
JOHN R. EVANS, ASSISTANT CHIEF, FIELD ENGINEERING BUREAU
JAMES E. BARR, CHIEF, SAFETY AND SPECIAL RADIO SERVICES
VERNON A. SPRING, ASSISTANT CHIEF, SAFETY AND SPECIAL RADIO SERVICES
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STANLEY E. McKINLEY, DEPUTY EXECUTIVE DIRECTOR
BERNARD I. KAHN, CHIEF MANAGEMENT INFORMATION DIVISION
RICHARD F. SOLAN, BUDGET OFFICER

SALARIES AND EXPENSES

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Commissioners	729	744	795
	2. Broadcast	4,295	4,154	4,346
	3. Common carrier	2,323	2,208	2,441
	4. Safety and special radio services	1,677	1,733	1,835
	5. Field engineering	4,658	4,621	4,950
	6. Research and planning in communications technology	1,375	1,718	2,447
	7. Citizens radio service	692	963	890
	8. Community antenna TV	282	509	652
	9. Support activities	2,363	2,328	2,915
	Total program costs, funded [1]	18,394	18,978	21,271
	Change in selected resources [2]	−542	196	
10	Total obligations	17,852	19,174	21,271

[1] Includes capital outlay as follows: 1967, $2,037,000; 1968, $259,000; 1969, $375,000.
[2] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Stores	12	10	10	10
Unpaid undelivered orders	839	304	500	500
Advances	11	6	6	6
Total selected resources	862	320	516	516

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)—Continued

		1967 actual	1968 estimate	1969 estimate
	Financing:			
40	New obligational authority (appropriation)	17,852	19,100	21,271
44	Proposed supplemental for civilian pay act increases		74	
	Relation of obligations to expenditures:			
71	Obligations affecting expenditures	17,852	19,174	21,271
72	Obligated balance, start of year	1,125	982	1,064
74	Obligated balance, end of year	−982	−1,064	−1,771
77	Adjustments in expired accounts	−30		
90	Expenditures exclu ling pay increase supplemental	17,965	19,036	20,546
91	Expenditures from civilian pay act supplemental		56	18
	Expenditures are distributed as follows:			
01	Out of current authorizations	16,968	18,110	19,426
02	Out of prior authorizations	997	982	1,138

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	Personnel compensation:			
11.1	Permanent positions	14,705	15,460	16,893
11.3	Positions other than permanent	46	52	55
11.5	Other personnel compensation	151	155	161
	Total personnel compensation	14,902	15,667	17,109
12.0	Personnel benefits	1,096	1,164	1,223
21.0	Travel and transportation of persons	220	213	274
22.0	Transportation of things	54	61	64
23.0	Rent, communications, and utilities	447	467	564
24.0	Printing and reproduction	357	210	232
25.1	Other services	264	675	1,132
25.2	Services of other agencies	89	64	65
26.0	Supplies and materials	362	180	233
31.0	Equipment	546	238	334
32.0	Lands and structures	56	21	41
42.0	Insurance claims and indemnities	1	18	
	Total costs, funded	18,394	18,978	21,271
94.0	Change in selected resources	−542	196	
99.0	Total obligations	17,852	19,174	21,271

PERSONNEL SUMMARY

Total number of permanent positions	1,569	1,616	1,659
Full-time equivalent of other positions	11	13	13
Average number of all employees	1,458	1,470	1,543
Average GS grade	8.9	9.1	9.1
Average GS salary	$10,185	$10,848	$11,103

Mr. EVINS. The committee will come to order.

We have with us this morning a very distinguished group from the Federal Communications Commission. The Chairman, Mr. Hyde, is getting a little seniority; Mr. Bartley, well and favorably known; Commissioner Robert E. Lee; the distinguished Commissioner Cox will be here; Mr. Lee Loevinger, well and favorably known for his great work in the antitrust field as well as with the Commission; Jim Wadsworth, Commissioner, and Mr. Nicholas Johnson, Commissioner.

Mr. Bernard Strassburg is the Chief, Common Carrier Bureau, and Mr. Cowan is Assistant Chief. George S. Smith, Chief of Broadcast Bureau and his assistants Wallace Johnson and Richard Franz, and Mr. Plummer is the Chief of Field Enginering. John R. Evans is Assistant Chief of the Field Engineering Bureau; Mr. James Barr is the Chief, Safety and Special Radio Services; and Mr. Vernon A. Spring is his Assistant Chief.

Mr. Watkins is Chief Engineer and Mr. Geller is General Counsel. Mr. Paglin is the Executive Director, Mr. McKinley is his deputy, Mr. Kahn is the Chief, Management Information Division, and Mr. Solan is the Budget Officer.

Mr. Chairman, we are always pleased to hear you and you may proceed as you wish. I believe you have a statement.

General Statement

Mr. Hyde. Mr. Chairman and members of the committee, it is a pleasure for me, my colleagues, and members of the Commission's staff to be here today to discuss with you the programs and financial requirements of the Federal Communications Commission. Our estimates for fiscal year 1969 call for a total budget of $21,271,000. This is an increase of $2,097,000 over fiscal year 1968. Of this amount, almost $1 million represents increases to our appropriation required by pay costs resulting from legislation, costs to maintain our present staff, and the transfer to us of budgetary responsibility for emergency communications functions.

At the outset, let me say that we in the Commission fully realize that this request represents an increase at a time when all agencies are being urged, perhaps more strongly than ever before, to hold down budget estimates and to curtail spending in every way possible. We believe, however, that the mission and responsibilities of this agency are essential to the overall national security and well-being of the Nation, and believe that our estimates have been held to the lowest level consistent with the national interest.

The expansions in the communications industry over the past 20 years, which are cited in our justifications, are phenomenal. To cite just a few:

In 1948 we had only 119,000 licensed stations in our Safety and Special Radio Services; today we have 1.7 million;

In 1948 we had 3,163 AM, FM, and TV stations; today we have over 7,600;

In the common carrier field the growth in plant investment of the Bell system alone rose from 6.3 billion to 38.4 billion in the last 20 years. During this same period, revenues collected by the carriers for services subject to our regulatory jurisdiction have increased from about 650 million to almost 4.5 billion, an increase of roughly 600 percent.

This rate of growth in the communications industry is expected to continue into 1969 and future years. It may be surprising, but staff increases for the Commission since 1948 have amounted only to about 10 percent. I might add at this point that the growth of the services I have mentioned, and others which I have not mentioned, has not just meant that we are being confronted with additional applications to process. More than that, as these services grow they bring more complex engineering, economic, legal, and social problems which, in practically every instance, means that applications demand increased staff effort.

Mr. Evins. I think it is a compliment to the staff of your Commission that you have only grown 10 percent, whereas industry has grown 600 percent. It is a very efficient staff.

Mr. Hyde. I am sure that observation is going to give encouragement to a very hard pressed staff. Thank you very much.

New Developments in Industry

While we expect these services to continue to thrive, I do not want to dwell on them alone. I want to call your attention to some of the other dramatic changes that we are now witnessing and the new services to be regulated. We now have communication satellites, tran-

sistorized international cables, cable televisions, and the use of computers in communications to name a few. These developments are already with us, but they are still in their infancy and, as a result, it appears that the Commision will continue to be confronted with increasingly difficult and time-consuming policy and regulatory problems for the foreseeable future. Problems will be generated by these developments which will require that we be capable of more intensive planning and analysis and that we be provided with the resources necessary to obtain the most capable staff assistance available for these purposes.

POTENTIAL FUTURE DEVELOPMENTS

These recent changes are not the end of the line. We believe we are at the doorway to many more technological innovations which will have a very significant impact on our way of living and on the economy of this country. I am referring now to some of the things experts predict will be available in the near future, such as: "picturephone," facsimile reproduction of newspapers and magazines, merchandizing via communications media, among others. That is not designed to be an exclusive statement.

NEED FOR PLANNING

With respect to any of the items I have mentioned, old and new, the Commission has a vital role to play in insuring that they are used most effectively in the interest of the Nation as a whole. For this reason, it is most important that this Commission, possibly more so than other agencies which are regulating industries that are not undergoing such revolutionary changes, have the ability to do long-range planning. There is an emphasis in the Government today to have agencies do more in anticipation of future needs. While we recognize that long-range planning may be more difficult in this industry because of its rapid changes, we also recognize that this fact alone makes it more imperative that we do more along these lines, and we are budgeting accordingly.

NEED FOR RESEARCH

An inevitable consequence of long- or short-range planning in the FCC is the need for research. Research must be undertaken in scientific, economic, social, and other technical fields in order that we may properly evaluate the feasibility of new proposals and developments; their relationship to, or impact on existing services; their long-range potential; their value in relationship to available space in the radio spectrum; other means of providing comparable services; the benefits to accrue to the public as a whole, and at what cost; the impact on the national economy and the national welfare and I should say the national defense, and various other considerations.

The Commission has submitted a research and policy studies program to the Bureau of the Budget for its review and coordination. The Commission's plan is designed broadly because we believe the nature of the problems in communications, today and in the future, must be considered in relation to one another and over a broad span of time and technological development. We hope to achieve a program which will draw upon the best talents and abilities of the Commis-

sion's staff, outside contractors, and others in the Government and non-government community who are engaged in communications work.

STATUS OF RESEARCH AND POLICY STUDIES

Mr. EVINS. When you speak about having submitted this research and policy study to the Bureau of the Budget, if I might interrupt, is this your long-range plan?

Mr. HYDE. I am referring to the studies that were provided for in our 1968 budget. We have had numerous conferences on this subject; we have consulted some very eminent experts in the field. We are proceeding with coordination through the Bureau of the Budget.

Mr. EVINS. Has the Bureau of Budget approved what you have recommended?

Mr. HYDE. It has not, but we think approval is just in the offing.

We anticipate that a significant portion of the time devoted to the Commission's research and policy studies program, in the first year at least, will concern the nature and scope of the program for the development of long-range policy. In other words, we are going to be studying how you go about this business of long-range policy.

Nevertheless, there are certain issues before the Commission which require short-term resolution. The currently outstanding Notice of Inquiry dealing with the interrelationship of computers with communications is an example of a major problem which must be dealt with expeditiously. Another problem requiring the immediate undertaking of long-range research concerns the congestion in the land mobile radio services. We cannot delay proceeding with these urgent matters; but in so doing, we are mindful that solutions to these problems must be integrated within the content of the long-range program to assure their effective ultimate resolution. It is for this reason that these pressing problems have been included within the purview of the long-range program.

We believe that our initial effort in research and policy studies will materially assist us in providing data essential to the resolution of certain immediate problems. Of perhaps even greater importance, we anticipate that this program will identify future issues whose breadth and complexity will require extended study to assure that the problems raised by these new developments may be effectively resolved in the public interest. Accordingly we are asking $400,000 more for this program in fiscal year 1969 to maintain the momentum of this effort.

COMMISSION ACTIONS TO RELIEVE LAND MOBILE CONGESTION

With respect to the increasing congestion in the land mobile radio services, particularly in the principal metropolitan areas of the country, the Commission has made considerable progress during the current fiscal year toward finding solutions and has other actions under way which are expected to be completed before the end of this fiscal year. However, we also have a number of major possible actions under study which will carry over not only into fiscal year 1969, but probably into fiscal year 1970, and perhaps beyond. I am sure to allocate the frequencies is going to be a continuing function.

On February 9 of this year, less than 2 weeks ago, we completed action on an important rulemaking proceeding which has resulted in the addition of approximately 165 new communication channels for use by the public safety, industrial, and land transportation radio services. The frequencies are in what we call the 450–470 MHz band, which is a part of the radio spectrum suitable for land mobile use in cities. Among other things, the action gives specific recognition to police communication requirements by giving law-enforcement agencies access to 36 new channnels, of which 20 have been allocated exclusively for use by police departments.

I think you will recognize that this is recognition of the need for bolstering up our police effort.

The 450–470 MHz decision was made possible by recent technical improvements in radio equipment performance so that the width of existing communication channels can be reduced to one-half their present value, with little or no impairment in the quality of service. We call this "channel splitting." Other beneficiaries of our action include, for example, the small businessman, the airline industry, the central station protection industry (or burglar alarm business), fire departments, and others. We reserved some channels for possible future use in connection with the highway safety program and are maintaining liaison with the Department of Transportation to determine how these frequencies may best be used. We also reserved some channels for possible radio teleprinter development and shortly will open a proceeding on teleprinter possibilities and requirements. Further action on channel splitting for the communication common carriers, utilizing the 450–470 MHz band, is also under consideration currently.

Some time ago, the Commission established and Advisory Committee for the Land Mobile Radio Services under the chairmanship of Commissioner Cox. This committee was established to study various possible ways in which the land mobile services could improve their use of the spectrum space already allocated to them and thereby reduce some of the current congestion problems. The committee submitted its final report to the Commission in late November 1967, and the report is being studied with care not only within the Commission, but also by many other interested persons. As a matter of fact, the report has gained rather extensive attention, some of it quite controversial. A number of the recommendations of the committee already have been carried out, and others will be implemented as the work on specific recommendations is completed. The Commission's decision to proceed with its most recent channel-splitting action (450–470 MHz) stems in part from the work of the committee. Similarly, a further step toward interservice sharing, in accordance with the committee's recommendations, has been ordered into effect. Recommendations that we make procedural changes have been partially implemented; others will be considered as appropriate.

A number of additional proceedings affecting the Land Mobile Service have either been completed recently or are in progress. In the context of the overall land mobile problem, these proceedings might be considered minor, but they are of great importance to the people directly affected. For example:

(*a*) A number of additional frequencies have been established exclusively for radio paging purposes. The private system phase

of this proceeding has been completed, but the communication common carrier portion of the problem drew so many conflicting comments that it has not yet been completed.

(*b*) Several frequencies were established for specialized uses, such as load shaving in the electrical utilities industry; the remote control of locomotives in industrial switchyards, and the remote control of certain specialized equipment used by the petroleum and logging industries.

(*c*) Action has been taken to increase the security of surveillance communications by law enforcement agencies, consistent with the President's program for a general attack on the increase in crime.

POSSIBLE USE OF TV FREQUENCIES

Despite the progress outlined above, much remains to be done to alleviate land mobile congestion. Several additional measures already have been undertaken and are in various stages of study or consideration, while others are scheduled to be started when we have the resources to undertake them. For example, more than a year ago, the Commission decided to investigate the feasibility of the sharing of VHF–TV channels by the Land Mobile Radio Services. With extensive participation by industry, this project has been active during the past year, and it is estimated that the final report, with its conclusions and recommendations, should be available by the end of the year. When the entire report becomes available, the Commission will have to decide what action it wishes to propose to the public, if any, with respect to implementation. If this plan of interservice sharing is practical at all, it probably will pose difficult administrative and legal problems which will require a considerable time to resolve. If you sense the debate that is developing between the broadcasting industry and the mobile, you will sense what I mean by indicating there will be legal problems.

Some time ago, the Commission established another group composed of most of its senior staff officials to study the feasibility of using some of the UHF–TV channels to solve land mobile frequency shortage problems. Three separate alternatives have been investigated in this area by staff working groups, composed of the Commission's best engineers. Results of these investigations have been reported to the Commission and now are under review.

They were under review last week and will be under further review in the next few days when we can schedule such a meeting.

The Commission has had a series of private—nonpublic—meetings to discuss the various alternatives. The next step, expected to be taken in the near future, is to instruct the staff on what they should do next. It may be that a majority or a unanimous Commission will decide to seek advice from the public as a next step. This would be either by a notice of inquiry or by a notice of proposed rulemaking. A further complication is that persons interested in TV broadcasting from space satellites believe that a number of the UHF–TV channels should be reserved now for space broadcasting in the future. This represents additional competition for valuable spectrum space. Additionally, a group of land mobile users is having a study made by a firm of engineering consultants to see if some television space can be made available to the land mobile services without damage to our television allocations.

PERSONNEL COMPENSATION INCREASES

With respect to personnel compensation, we are requesting an increase of $1,441,352. I would like to explain to you the specific purposes and reasons for this increase:

PAY LEGISLATION

First, we have an additional requirement for $196,413 to cover the cost of the recent pay legislation. This amount is necessary to pay the higher salaries for a full 12-month period instead of 10 months, as in fiscal year 1968.

MAINTENANCE FISCAL YEAR 1968 STAFF

Second, $377,270 is required to maintain our staff at the fiscal year 1968 level. By this I mean the cost of periodic-within-grade increases and the cost of salaries for 261 workdays in 1969 as compared with 260 in 1968. This 1 extra day amounts to approximately $60,000. There are also promotions, of a routine nature, for employees who were hired as trainees or at entrance professional levels who will be moved up the training ladder at regularly scheduled periods.

FUNDING EMERGENCY COMMUNICATIONS FUNCTIONS

Third, we have, for the first time, a request for $296,064 for full funding of our emergency communications activities. These activities have previously been funded, at the same dollar level, by OCD and OEP. However, the Commission is firmly convinced that emergency planning in communications is not something that is related solely to military emergencies. It is a continuing requirement of the industry for natural disasters such as earthquakes, floods, and tornadoes, as well as manmade disasters such as explosions, blackouts, fires, and a whole gamut of other extraordinary circumstances which are unpredictable but are certain to occur. If our communications systems can be planned to operate in these situations, these same emergency procedures and systems can be used in military emergencies or national crises. I also should add that the Communications Act and Executive Order No. 11092 place responsibility on the Commission to carry out emergency planning in the field of communications.

STAFF INCREASES

Fourth and last, we have $571,605 requested for staff increases. This increase would provide 73 man-years of employment; or a 5-percent increase over our fiscal year 1968 level.

With your kind indulgence, I would like to discuss briefly a few of these staff increases. First, I would like to say that we are not proposing to undertake any new programs in fiscal year 1969. It is true that we expect to have to handle many new or unique problems within our existing programs, but we will have no new programs as such.

I am saying that with this reservation: If there should be some exciting new technological development in communications there of course could be some demand upon us.

INCREASE IN BROADCAST AREA

In the broadcast area we are requesting an additional 9.5 man-years of employment: a 3-percent increase. This increase is essential if we are not to fall further behind in our application processing and hearing work. The Commission feels very strongly that larger backlogs should not be permitted to build up to create even greater delays in deposing of these matters. These matters are increasing in both number and complexity, require more time to handle, and thus, necessitate an increase in staff.

COMMON CARRIER INCREASES

Similar difficulties exist in the common carrier field where we are requesting an increase of 11 man-years. This increase is primarily in the domestic rate regulation area but does provide small increases in the application processing unit of domestic radio services, and for international and satellite communications. With respect to domestic rate regulation, we feel that a more informed and orderly resolution of ratemaking problems would result from the application of recent developments in economic and computational techniques, including the use of econometrics, linear programing, and the use of computers. To accomplish this and to apply such techniques on a continuing basis requires that fact-gathering and reporting practices of common carriers be so designed as to complement and support the Commission's needs. To implement this program, a small staff increase is proposed. We also have need for additional staff assistance in our inquiry in docket No. 16979 into the regulatory and policy problems presented by the interdependence of computer and communications services and facilities.

I think I would like to interpolate a bit here.

Early in our comprehensive investigation of the Bell systems, and even before that in connection with our investigation of the telegraph industry, we had need for more comprehensive current information about the telephone business. We make calls upon the telephone companies for information and they undertake to provide it. The problem was that we had not developed procedures, and they had not developed methods adequately to give that to us with the immediacy that we think is appropriate to the tempo of the times. So what I am talking about here is the provision of procedures both in our own shop on the design of them and in the businesses of the carriers, in which we of course would have considerable interest, to give information on a current basis.

Mr. EVINS. Industry is always very cooperative with the Commission?

Mr. HYDE. The regulated industry is cooperative. But we have learned a lot in our comprehensive investigation, as I am sure they have. They will agree that more expeditious techniques are needed to supply needed information.

INCREASE FOR FIELD ENGINEERING BUREAU

Earlier I cited some figures on the growth of the number of authorized stations now in operation. I would like to now elaborate on

some of these figures for the purpose of illustrating the impact of this continued growth on our field activities. Records show that, as recently as 1958, we had only 447,000 authorized stations utilizing 1.4 million transmitters. At the end of June 1967, we had 1,673,000 authorized stations utilizing 6 million transmitters. Let me repeat those figures: 447,000 stations growing to 1,673,000 and 1.4 million transmitters growing to 6 million in less than 10 years. In contrast, the Commission's field staff, which must monitor, inspect, and investigate complaints of interference among these stations has increased only 9 man-years during this same period; that is, from 390 to 399 employees.

We believe this lack of manpower in this crucial area has hurt the effective use of the radio spectrum and has resulted in an increasing percentage of violations. This is proven in the relatively few stations we are able to inspect and monitor.

What I am saying there is that inspections, when we can make them, indicate that the stations have been operated with little apprehension of their being detected.

At the present time, for lack of manpower, we are eliminating some 3,000 scheduled monitoring watches per year and are compelled to close down our monitoring stations during those watch periods. Because of pressures of other work, we have also cut back the time we have been able to devote to the investigation of interference complaints and broadcast station inspections. We could very effectively use significant increases in our field operations but because of overall budgetary constraints, we are restricting our request to 7.3-man-year increase for interference investigations and broadcast station inspections. I think that is very, very cautious in view of the demand on staff.

NEED FOR TECHNICAL EQUIPMENT

Field activities have not suffered from a shortage of manpower alone; there is an urgent need for replacement or modernization of technical equipment. Many items of equipment such as receivers, meters, and frequency measuring devices in both our field installations and our laboratory are over 20 years old. In fact, we feel that at least 50 percent of all equipment in our field installations has reached the point where it should be replaced. We have tried to maintain a replacement schedule calling for $300,000 a year for field operations, but we have been unable to keep to it. Again in fiscal year 1969, for economy reasons, our request is being held to $183,000, the same as fiscal year 1968.

COMMUNITY ANTENNA SERVICE

I would like to turn now to the community antenna television service. This is our newest major regulated service. As you are aware, CATV systems receive and amplify the transmissions of one or more TV stations and redistribute the signals by cable to private homes or places of business for a fee. Some signals may be distributed several hundred miles from the originating stations.

Latest industry figures indicate that there are now close to 2,000 systems operating, serving 3,000 communities and approximately 10 million people. At the same time, there are almost 1,900 additional systems that have local franchises but are not yet in operation, and

approximately 2,350 applications pending with local authorities for franchises to serve an additional 1,300 communities.

The Commission's rules provide that no new system may go into operation in any of the top 100 television markets except upon a showing made in evidentiary hearing and approved by the Commission that such a distribution of signals would be in the public interest. It is estimated that 275 to 300 petitions of this type will be filed with the Commission in fiscal year 1968 and an equivalent number in fiscal year 1969. Increased filings also are anticipated in requests for special relief from the Commission's rules and in the institution of compliance proceedings. We have built up a small staff to handle the workload that is continuing to increase in this service, but we must ask for more funds for these activities in fiscal year 1969.

In conclusion, our fiscal year 1969 estimates provide for the Commission's future and expanding role in long-range planning and research and for our crucial and immediate needs stemming from the continual growth of current services. We have not taken these budget increases lightly and, after a searching review of our programs, feel that the increases proposed are in the national interest, despite the overall budgetary situation.

We would now be pleased to answer any questions you may have with respect to our programs or estimates.

I would make this one further observation that I feel that this is truly a conservative estimate considering the tremendous growth in communications.

Mr. Evins. Thank you, Mr. Chairman. That is a very fine statement. It is very comprehensive.

We are impressed with the growth of the communications industry. There are more radios than ever, more stations than ever, and more televisions. I believe you said about three out of five families now have color television and there are more televisions than there are telephones.

What I am trying to say is, we can see the tremendous growth of the communications industry all over.

Mr. Hyde. That is right.

BASIS FOR BUDGET PROJECTIONS

Mr. Evins. Are you projecting your budget just on the growth of the industry or are you projecting your budget on the workload of the Commission?

Mr. Hyde. It is a combination of both, Mr. Chairman. We are putting more emphasis on planning for the future as we did last year than had been the practice for many years before that. There are very rapid technological developments and there are very rapid developments in service concepts which point up the need for better planning.

Mr. Evins. Your budget has grown too, as you recognize, over the years. In 1959 it was $8.9 million, in 1960 it was $10.5 million, and this year is the highest budget I believe ever in the history of the Commission. Up to $19 million in 1968, and this year is $21.271 million. So the budget of the Commission is also increasing.

Mr. Hyde. It is. I have tried to point out, and I believe that I have, that the increase in budget, in personnel, is not in the same ratio by any means as the increase in the development of communications facilities.

Mr. EVINS. Do any of the Commissioners have any observations on the growth of industry or any other comments they want to make?

Mr. HYDE. Commissioner Bartley is our next ranking Commissioner. He is a veteran and has observed the growth. I am sure he can give you some observations.

Mr. BARTLEY. I can probably just go back and tell you what Commissioner Webster told me when I first went on the Commission: "You will find out two things. It is the shortest 7 years you ever saw and every year you think it is going to get a little easier, but it is not. Just more and more.

Mr. EVINS. A full-time activity, I know.

Mr. LOEVINGER. I might volunteer a few comments.

BUDGET COMMENTS—COMMISSIONER LOEVINGER

Mr. EVINS. Commissioner Loevinger.

Mr. LOEVINGER. I think the significant figure is that which appears in the graph on page 6 in the proposed budget. Prices keep going up, salaries keep going up, there is a process called inflation I have never thoroughly understood, and I am happy to leave it to the President's Economic Advisers. But what we are really dealing with here is manpower and what this shows is the relationship between our work and our manpower. The salaries, after all, are set by Congress. We do not control those.

For a given number of men we pay out what you tell us to pay out. So it is not the dollars that are significant but the men, and this shows the relationship between men and work.

The second comment is this: I have been on the Commission for 5 years now. From time to time I have passed comments, some laudatory and some not so laudatory, of the operation and work of the Commission. I have said before this committee on prior occasions that I thought sometimes we spend too much time worrying about broadcasting as such, particularly about broadcast programing, which I consider to really be very little of our business for a number of reasons, including the first amendment.

I think that today the Commission is doing more work in coming to grips with its basic statutory mandate as well as with the basic communications problems of the country better than it has at any time during the period of my observation and experience on the Commission. It is partly due to the Commission itself.

I think a good deal of credit is due to the Chairman, Rosel Hyde. This is something he cannot say but I can. I think we are really dealing with basic and important problems today in a more realistic sense than at any time in my experience on the Commission; this is a factor that should be, and I am sure is, of concern to this committee.

WORKLOAD AND STAFF INCREASES

Mr. EVINS. Very good.

Your average employment is up about 35 percent from 1957 to 1967, a 10-year period. Your applications received are up about 94 percent, and applications disposed of are up 106 percent. So the Commission is really active in disposing of the applications received. It is a very impressive chart.

Commissioner Lee.

Mr. LEE. I have nothing to volunteer, Mr. Chairman. I am always happy to come up here and renew old acquaintances, but I have learned not to volunteer too much.

Mr. EVINS. You always have a wealth of information.

Commissioner Wadsworth has not arrived yet, nor has Commissioner Cox.

Commissioner Johnson, do you have a comment?

BUDGET COMMENTS—COMMISSIONER JOHNSON

Mr. NICHOLAS JOHNSON. I would have just a brief statement, Mr. Chairman.

I think in terms of the budgetary analysis of an agency like the FCC, the significant distinction between our programs and those of many other agencies is that we are not engaged in expenditure of public funds for major programs. That is to say, we are not subsidizing industry in the sense that the Maritime Administration is. We are not engaged in major purchases in the sense that the Defense Department is.

The economic significance of what it is we are doing is in the private sector, in a multibillion-dollar telephone company, communications satellites, private microwave systems, land mobile radio, and the American broadcasting industry.

And there is something of a multiplier effect in the significance of the budgetary allocations to the FCC.

If we do our job badly, it is seen not in terms of the thousands of dollars that are involved in the particular program at the FCC, but rather in terms of the hundred million or billion dollar impact on the national economy. I think it is useful, for me at least, to think of our budget in those terms and it may be for you as well.

I would add only one brief second comment, and that is the significance, in my judgment, of the research and policies study program on which Chairman Hyde has taken such very constructive and creative leadership during the past year and the Bureau of the Budget has seen fit to endorse. I think within that program lies the solution to many of the problems that have been on my mind and I think have been on the minds of you gentlemen as I have heard your views expressed at these hearings and upon the record during the past year.

Mr. EVINS. Very good.

Commissioner Cox, do you have any comment?

Mr. COX. I am sorry to be late. Since I did not hear what went before, I do not think I have anything to add. I will be happy to answer any questions.

Mr. HYDE. If I may suggest to Commissioner Cox, the question is what the workload situation of the Commission is, what is its challenge at this time and do we need the funds we have asked for here.

Mr. COX. That is rather leading.

Mr. EVINS. You are asking for support.

BUDGET COMMENTS—COMMISSIONER COX

Mr. COX. I have no hesitancy in saying our workload is growing and that we are having great difficulty in keeping up with it as we

would like to—and as I am sure Congress would like us to. I think the challenges which the Commission faces are more difficult, perhaps more interesting but certainly more complicated in the aggregate, I think, than we have faced since I have been associated with the Commission. We have a great many extremely important policy decisions to reach and implement in the immediate future, and I wholeheartedly concur in the need for the funds we are seeking.

Mr. EVINS. Very good.

STATUS OF TECHNICAL RESEARCH STUDIES

Mr. GIAIMO. I have just some general questions at this point.

You asked for $300,000 last year for study, of the spectrum allocation, did you not?

Mr. HYDE. Yes.

Mr. GIAIMO. How much of that money did you get last year? I do not recall a figure.

Mr. HYDE. The total for research including the spectrum——

Mr. GIAIMO. Was there not one item of $300,000 for spectrum allocation that you asked for?

Mr. SOLAN. Yes, and there was $150,000 for the citizens band and $150,000 for economic studies.

Mr. GIAIMO. In addition to the $300,000?

Mr. SOLAN. Yes, totaling $600,000.

Mr. GIAIMO. How much did Congress give you of the $300,000?

Mr. SOLAN. $300,000.

Mr. GIAIMO. For how long a period was that?

Mr. SOLAN. One year.

Mr. GIAIMO. Are you asking for any more in that area?

Mr. HYDE. We are asking for $400,000 for research.

Mr. GIAIMO. Total research?

Mr. SOLAN. One million total.

Mr. GIAIMO. I am getting confused now. Let's address ourselves to just the spectrum allocation study. How much money did you get last year?

Mr. HYDE. The Congress authorized a total of $600,000 which included $300,000 that you mentioned.

Mr. GIAIMO. Right.

Mr. HYDE. We are asking in this budget for $400,000 additional for research but not limited to mobile service.

Mr. GIAIMO. I see. So the $300,000 you got last year was limited to land mobile, was it not?

Mr. HYDE. I do not believe it came out with that limitation, but it was clearly intended that we should invest substantial parts in land mobile. There is no question about that.

Mr. GIAIMO. Did you?

Mr. HYDE. We have. I must say this: We do not have our policy research program underway. It is under review at the Bureau of the Budget now but we have invested substantial amounts of Commission efforts of our overall funds in the land mobile problem. And we expect as soon as we get Budget Bureau clearance to invest $600,000 in this overall allocation to the policy problems.

Mr. LOEVINGER. Is it not the case that the money was first frozen

by Congress and then by Executive order and it cannot in fact be spent or committed until the plans for its expenditure have been approved by the Budget Bureau?

Mr. GIAIMO. This is what I am trying to get at.

Mr. LOEVINGER. These are now pending at the Budget Bureau and in effect the money has not yet been released.

Mr. GIAIMO. That is what I wanted to know. In other words, you really have not spent it yet?

Mr. LOEVINGER. That is right. We have not gotten it yet.

Mr. GIAIMO. Have you been able to start your studies?

Mr. HYDE. All we have been able to do is make preparation for the studies. That is all.

Mr. GIAIMO. What concerned me, if you had already spent it I wanted to know the result of the expenditure. We are where we were a year ago then; is that not right?

Mr. HYDE. So far as putting money out for contractual studies in this area, we are where we were a year ago. But I would hasten to add that insofar as working on the land mobile problem, we are a long ways ahead of where we were a year ago.

ACTIONS IN LAND MOBILE AREA

Mr. GIAIMO. Are you really?

From your own statement on page 6, you say approximately 165 new communication channels for use by the public safety, industrial, land transportation radio services have been made available. That is not very much when, by your own statement, you tell us that you get about 20,000 applications a month.

Mr. HYDE. We get about 40,000 a month in all safety and special services. But these are shared services for the most part. In the land mobile and particularly in the case of police, it is about a 200-percent improvement in the position of the police service.

Mr. GIAIMO. It may be so in the position of the police services but your public notice, May 3, 1967, you say with nearly 3 million transmitters in service and new applications coming in at the rate of almost 20,000 per month, the land mobile growth rate is such as to produce a severe congestion in the large metropolitan areas.

I do not see the substantial increase or gain or advancement.

Mr. LOEVINGER. There are many stations on one channel; 165 channels is 165 channels in every community, and they are shared channels. So this may be thousands of stations. It is not 165 additional stations, but 165 channels which may mean many thousands of stations.

Mr. GIAIMO. I understand that.

Mr. EVINS. Since last year the Commission has approved 165 more channels. I thought Mr. Giaimo would commend the Commission for action in this area. This has relieved the pressure somewhat.

Mr. GIAIMO. I have a great deal of affection for the Commission and the Commissioners but I am not about to commend them in the area of land mobile service.

Mr. HYDE. Let me assure you we do not regard this action which you have mentioned here as solving the problem by any means. We do think it is a very significant improvement. We do think it will take care of the congestion for perhaps a couple of years. The congestion, by the

way, is pretty well concentrated in the larger cities. Within that time we hope to do something far more comprehensive.

Mr. Cox. The users themselves, I think, agree that the relief afforded by the 450 megacycle splits will take care of their foreseeable needs, even in the major metropolitan areas, for about 2 to 3 years.

Mr. Giaimo. That is not what the users tell me, Commissioner Cox. From what I understand and what we discussed here last year, we were going to have a long-range study and a short-range study to try to do something about spectrum allocation in this critical area, and part of the solution, and in my opinion a minor solution, at the time was to try to gain some spectrum space by the technique of pulling the width of channels down to a lesser amount.

Mr. Hyde. That is right.

Mr. Giaimo. I suspect that is how you accomplished the 165 new communications channels.

Mr. Hyde. It is. We made some adjustments as between citizens' radio and mobile.

Mr. Giaimo. These frequencies are all to be found, as you say, in the 450 to 470 megacycle band?

Mr. Hyde. Megahertz. Either term will do.

Mr. Giaimo. Is that not already in the band allocated to land mobile?

Mr. Hyde. Yes.

Mr. Giaimo. So all you have done is to have worked within the land mobile band and by contraction I suppose you have been able to get some technical advances and further use of the spectrum.

Mr. Hyde. That is correct.

USE OF TV FREQUENCIES BY LAND MOBILE

Mr. Giaimo. If you recall at this time last year we also discussed what you were doing about looking at the large UHF area which starts at 470, I believe, and what are we doing about trying to find some additional space in there at the lower portion which would be from 470 on up, channels 14 through 20, which I understand is what the industry has been asking you to do.

Mr. Hyde. We have done extensive work in this area through the resources of our present staff. We have had rather comprehensive studies prepared by our in-house talent. We have before the Commission the preliminary reports which we are currently discussing. There are several possible ways suggested for further development.

Our next step in this area will be to try and make a judgment as to what seems to be the best way to do it and then to concentrate on that. We will undoubtedly get out some form of public notice inviting participation of industry and interested parties generally.

I must tell you, Mr. Congressman, that this has taken longer and has proved more complex than I thought it would be when I talked to you last year at budget time, but there has been a tremendous amount of work invested in it.

Mr. Giaimo. The only point I want to make at this time in reference to your general statement, and you can correct me if I am wrong, is when we synthesize and boil down what you have said here about the

minor accomplishments in this area of land mobile radio which you admit are minor, much remains to be done.

What you are saying is the small amount of gain you may have made is from the same process you spoke about last year; namely, channel splitting or reduction in the presently existing land mobile band. So in effect you have not said anything about what you have done or contemplate doing to really tackle this problem and find some real-location of the spectrum.

Mr. HYDE. It is true we have not completed any actions looking toward interservice sharing such as broadcasting and mobile services.

Mr. GIAIMO. Exactly.

Mr. HYDE. But we do have some studies well advanced looking into these possibilities. This is a very difficult matter to resolve.

Mr. GIAIMO. I do not want to belabor this, but I want to make this point. What I infer is, these small gains they are talking about have been done within the presently existing area allocated to land mobile space and have been accomplished by channel splitting which they mentioned last year, and nowhere in the statement do I read of any significant progress in reallocation of part of the spectrum presently assigned to the UHF area.

Mr. COX. Pages 8 and 9, Mr. Congressman. It says:

> The Commission established another group composed of most of its senior staff officials to study the feasibility of using some of the UHF-TV channels to solve land mobile frequency shortage problems.

I think this is an essential first step toward any course that we might take in this area. At the same time we have been doing this with our own staff, we have invited and encouraged participation by the industry. They have organized, I think it is called the Allocations Research Council, made up of some of the principal participants in the Land Mobile Advisory Committee, and have retained a leading engineering consulting firm to make a study of the UHF allocation to see what they could come up with in the way of constructive suggestions.

We have not yet either reallocated or authorized the sharing, which is a possible alternative, of any UHF spectrum space, but we have been making enough moves in that direction that the broadcasters are a little upset and are themselves now organizing to conduct some research of their own to see if they can find other alternative means, or if they can perhaps dispute with the land mobile users across-the-board.

Mr. EVINS. We will go into this in more detail in the budget.

COLLECTION OF FEES

Mr. JONAS. To what extent does the Commission collect fees from the public? What is the total amount?

Mr. HYDE. About 4 million annually. It goes into the general fund.

Mr. JONAS. I understand. I want to get the amount.

Mr. HYDE. Four million.

Mr. JONAS. When has this schedule of fees been revised?

Mr. HYDE. There has not been a general revision. I think there have been only minor changes since it was established.

Mr. JONAS. When was it promulgated?

Mr. SOLAN. March of 1964, I believe March 17.

Mr. JONAS. Is the Commission giving any consideration to making a change?

You are quick to point out that costs increase everywhere else. What consideration has the Commission given to this subject?

Mr. HYDE. We do not have a specific study underway. The subject has been mentioned only recently. It has been mentioned in connection with our examination of citizens' bands as being one way of perhaps bringing some serious purpose into that service.

Mr. JONAS. In general to what activities do these fees apply?

Mr. HYDE. They apply to all except to educational and public safety.

Mr. JONAS. For example?

Mr. HYDE. Government services and education are exempted.

Mr. JONAS. That would merely impose another burden on another unit of Government. I am thinking in terms of fees charged to commercial operators.

Mr. HYDE. There is a fee in each class of service.

Mr. JONAS. How much? What is the charge? Give us a little description of the extent to which these fees are handled.

Mr. HYDE. May I give you a schedule.

Mr. JONAS. We are talking now in terms of very valuable rights.

Mr. HYDE. Right.

Mr. JONAS. This budget, as the chairman pointed out, is doubling every few years. From what you say we can expect a continuing increase?

Mr. HYDE. That is right.

Mr. JONAS. One of these days it will be up to the point where it is a real burden.

Mr. HYDE. Mr. Congressman, I would be pleased to supply you a schedule of fees charged.

Mr. JONAS. Would you put that in the record; I would like to see the schedule.

Mr. HYDE. If you wish, I would be pleased to get you a breakdown of the fees collected.

Mr. JONAS. I would like to have a statement from the Commission showing how the fee schedule is formulated. Is it just an arbitrary figure?

Mr. HYDE. I would answer it this way: When the policy of collecting fees was adopted, the schedule was designed as a filing fee arrangement rather than an effort to collect an amount equivalent to the Commission's budget.

Previous to the establishment of this schedule, the Commission had generally thought that user-fee matters should be an overall Government policy. The Commission pretty generally stayed away from it although there was a notice of proposed rulemaking looking toward the establishment of fees in 1953.

We issued such a proposal and it was opposed vigorously in the Senate. I cannot recall the attitude in the House, but Senator Johnson's committee took a dim view of the whole matter. It was then

abandoned. In 1964 this present policy was established. At that time I think there was more general Government support for it.

Mr. BARTLEY. It was Senator Ed Johnson.

Mr. HYDE. Senator Ed Johnson.

SCHEDULE OF FEES FOR APPLICATIONS

Mr. JONAS. Let us have a schedule put in the record.

Mr. HYDE. Yes, sir.

(The schedule follows:)

SUBPART G—SCHEDULE OF FEES FOR APPLICATIONS FILED WITH THE COMMISSION

AUTHORITY: §§ 1.1101–1.1119 issued under sec. 501, 65 Stat. 290; 5 U.S.C. 140.

GENERAL INFORMATION

§ 1.1101 Authority.

Authority for this Subpart is contained in Title V of the Independent Offices Appropriations Act of 1952 (5 U.S.C. 140) which provides that any service rendered by a Federal agency to or for any person shall be performed on a self-sustaining basis to the fullest extent possible. Title V further provides that the head of each Federal agency is authorized by regulation to prescribe such fees as he shall determine to be fair and equitable.

§ 1.1103 Payment of fees.

(a) Each application, filed on or after January 1, 1964, for which a fee is prescribed in this subpart, must be accompanied by a remittance in the full amount of the fee. In no case will an application be accepted for filing or processed prior to payment of the full amount specified.Applications for which no remittance is received, or for which an insufficient amount is received, may be returned to the applicant.

(b) Fee payments accompanying applications received in the Commission's Offices in Washington, D.C., or in any of the Commission's field offices, should be in the form of a check or money order payable to the Federal Communications Commission. The Commission will not be responsible for cash sent through the mails. All fees collected will be paid into the United States Treasury as miscellaneous receipts in accordance with the provisions of Title V of the Independent Offices Appropriations Act of 1952 (5 U.S.C. 140).

(c) Receipts will be furnished upon request in the case of payments made in person, but no receipts will be issued for payments sent through the mails.

(d) Except as provided in §§ 1.1104 and 1.1105, all fees will be charged irrespective of the Commission's disposition of the application. Applications returned to applicants for additional information or corrections will not require an additional fee when resubmitted.

[*§ 1.1103(d) amended eff. 1–3–66; I(63)10*]

§ 1.1104 Return or refund of fees.

(a) The full amount of any fee submitted will be returned or refunded, as appropriate, in the following instances:

(1) Where no fee is required for the application filed.

(2) Where the application is filed by an applicant who cannot fulfill a prescribed age requirement.

(3) Where the application is filed for renewal without reexamination of an amateur or commercial radio operator license after the grace period has expired.

(4) Where the applicant is precluded from obtaining a license by the provisions of section 303(l) or 310(a) of the Communications Act.

(5) Where circumstances beyond the control of the applicant, arising after the application is filed, would render a grant useless.

(b) Payments in excess of an applicable fee will be refunded only if the overpayment exceeds $2.

[*§ 1.1104 as adopted eff. 1–3–66; I(63)–10*]

§ 1.1105 General exceptions.

(a) No fee is required for an application filed for the sole purpose of amending an authorization or pending application (if a fee is otherwise required) so as to comply with new or additional requirements of the Commission's rules or the rules of another Federal government agency affecting the authorization or pending application; however, if the applicant also requests an additional modification or the renewal of his authorization, the appropriate modification or renewal fee must accompany the application. Fee exemptions arising out of this general exception will be announced to the public in the orders amending the rules or in other appropriate Commission notices.

(b) No fee is required for an application filed by an alien pursuant to a reciprocal radio licensing agreement.

(c) No fee is required for any application or request for an STA or waiver.

[*§ 1.1105 as amended eff. 1–3–66; I(63)–10*]

SCHEDULE OF FEES

§ 1.1111 Schedule of fees for Radio Broadcast Services.

(a) Except as provided in paragraph (b) of this section, applications filed in the Radio Broadcast Services shall be accompanied by the fees prescribed below:

	AM	FM	TV	Translator	Auxiliary
Application for construction permit for new station	$75	$75	$150	$10	[1] $30
Application for major change	75	75	150	[2] 10	[1] 10
Application for renewal or assignment of license or transfer of control, exclusive of FCC form 316 applications (where more than one broadcast station license is involved, the application must be accompanied by the total amount of the fees prescribed for each license so involved)	75	75	150	10	[1] 30
Applications filed on FCC form 316 (where more than one broadcast station license is involved, the application must be accompanied by the total amount of the fees prescribed for each license so involved)	30	30	30	No fee	No fee
Application for construction permit to replace expired permit, FCC form 321	30	30	30	10	[1] 30
Application for modification other than a major change	30	30	30	No fee	[1] 10
Application for change of call sign for broadcast station		$30 in all services.			
All other applications in the broadcast services (excluding television translator applications not specified above)		[1] $30 for each application.			

[1] With respect to applications for remote pickup broadcast stations authorized under subpt. D of pt. 74 of this chapter, one fee will cover the base station (if any) and all the remote pickup mobile stations of a main station, provided the applications therefor are filed at the same time.

[2] For determining when a translator application is required to be accompanied by a fee under this section (though not for other purposes in the translator or other broadcast services), "major change" is defined to include only a change in the output frequency of the translator.

(b) Fees are not required in the following instances:

(1) Application filed by tax exempt organizations for the operation of stations providing noncommercial educational broadcast services, whether or not such stations operate on frequencies allocated for noncommercial educational use.

(2) Applications in the AM service requesting only authority to determine antenna power by direct measurement.

(3) Applications filed for covering licenses in the Auxiliary Broadcast Services.

[*§ 1.1111 as amended eff. 1–3–66; I(63)–10*]

§ 1.1113 Schedule of fees for Common Carrier Services.

Applications filed for Common Carrier Services shall be accompanied by the fees prescribed below:

Domestic Public Land Mobile Radio Service [1]

Application for initial construction permit or for relocation of a base station (including authority for mobile units, blanket dispatch station authority,[2] and standby transmitters without independent radiating systems [3 4])	$75
Application for initial construction permit or for relocation of a dispatch station,[5] control station or repeater station [4]	25
Application for modification of construction permit or license for base station, dispatch station, control station or repeater station at an existing station location	10
Application for renewal of license for base station	25
Application for renewal of license for dispatch station, control station or repeater station	10
Application for license, modification of license, or renewal of license for individual mobile stations	5

Rural Radio Service

Application for an initial construction permit or for relocation of facilities [4]	10
Application for modification of construction permit or license	10
Application for license for operation of a rural subscriber station at temporary-fixed locations	10
Application for license or modification of license for individual subscriber stations	5
Application for renewal of license	5

Point-to-Point Microwave Radio Services

Application for construction permit or for modification of construction permit to add or change point(s) of communication or to increase service to existing points of communication or for relocation of facilities [4]	30
All other applications for construction permits or modification of construction permits (no fee required when filed as part of a modification application requiring a $30 fee)	10
Application for license for operation of a station at temporary-fixed locations	30
Application for modification of license	10
Application for renewal of license	5

Local Television Transmission Service

Application for construction permit or for modification of construction permit to add or change point(s) of communication or to increase service to an existing station location or for relocation of facilities [4]	30
All other applications for construction permits or modification of construction permits (no fee required when filed as part of a modification application requiring a $30 fee)	10
Application for license for operation of an STL station at temporary-fixed locations	30
Application for license for operation of a mobile television pickup station	30
Application for modification of license	10
Application for renewal of license	5

[1] In this service each transmitter at a fixed location is a separate station notwithstanding the inclusion of more than one such station on a single authorization or under a single call sign.

[2] When included as part of a base station application, a request for blanket dispatch station authority made pursuant to the provisions of § 21.519(a) of this chapter does not require an individual application or fee. A request for such dispatch station authority filed separately from a base station construction permit application requires an application for modification of license and an appropriate fee.

[3] An application for a standby transmitter having its own independent radiating system requires the same fee as a base station application.

[4] No additional fee will be charged for applications for license to cover a construction permit unless there is a modification or variation of outstanding authority involved. In that event the appropriate fee for modification is applicable.

[5] This fee applies to any request for dispatch station authority not made pursuant to § 21.519(a) of this chapter.

INTERNATIONAL FIXED PUBLIC RADIOCOMMUNICATIONS SERVICES

International Fixed Public Station:	
Application for an initial construction permit for a new station or an additional transmitter(s) at an authorized station [4]	100
Application for construction permit for a replacement transmitter(s) at an authorized station (no fee will be charged for application for modification of license to delete transmitter(s) being replaced if both applications are filed simultaneously)	50
Application for change of location of an authorized station	100
Application for modification of license	10
Application for renewal of license	75
International Control Station:	
Application for an initial construction permit for a new station or an additional transmitter(s) at an authorized station [4]	30
Application for construction permit for a replacement transmitter(s) at an authorized station (no fee will be charged for application for modification of license to delete transmitter being replaced if both applications are filed simultaneously)	10
Application for change of location of an authorized station	30
Application for modification of license	10
Application for renewal of license	10

OTHER RADIO APPLICATIONS

Application for assignment of an authorization or transfer of control (a separate $10 fee is required for each call sign covered by the Application)	10
All other Common Carrier Radio applications	10

COMMON CARRIER NONRADIO APPLICATIONS

Applications by Communications Common Carriers for Authorization to Own Stock in the Communications Satellite Corp	10
Section 214 Applications by Telephone Co	50
Section 214 Applications by Telegraph Co	10
Cable Landing License Applications	100
Section 221 Applications	50
Interlocking Directorate Applications	10
Tariff applications to change charges or regulations on less than statutory notice	10
All other Common Carrier nonradio Applications	10

[*§ 1.1113 as amended eff. 1–3–66; I(63)–10*]

§ 1.1115 Schedule of fees for Safety and Special Radio Services.

(a) Except as provided in paragraph (b) of this section, all formal applications filed in the Safety and Special Radio Services shall be accompanied by the fees prescribed below:

Applications in the Amateur Radio Service:	
For initial license, including new class of operator license, and for renewal of license	$4
For modification of license	2
Request for special call sign pursuant to § 97.51	20
Applications in the Citizens Radio Service:	
For Class A station authorization	10
For all other classes of stations in the Citizens Radio Service	8
Applications for Radio Station Authorizations for Operational Fixed Radio Stations for which frequencies above 952 Mc/s are requested:	
For construction permit	30
For modification of authorization	10
Applications for Common Carrier Public Coast Stations in the Maritime Radio Services:	
For initial construction permit	50
For modification of authorization	10
Applications for renewal only for which FCC Form 405–A or 405–B is prescribed	4
All other applications filed in the Safety and Special Radio Services	10

(b) Fees are not required in the following instances:

(1) Applications filed in the Police, Fire, Forestry-Conservation, Highway Maintenance, Local Government, and State Guard Radio Services.

(2) Applications filed by governmental entities in any of the Safety and Special Radio Services.

(3) Applications filed by the following in the Special Emergency Radio Service: Hospitals, Disaster Relief Organizations, Beach Patrols, and School Buses, and non-profit Ambulance Operators and Rescue Organizations.

(4) Applications filed in the Disaster Communications Service.

(5) Applications for ship inspections pursuant to the Great Lakes Agreement, the Safety of Life at Sea Convention, and Parts II and III, Title III, of the Communications Act of 1934, as amended.

(6) Applications for Novice Class license in the Amateur Radio Service, applications for amateur stations under military auspices, and applications filed in the Radio Amateur Civil Emergency Service (RACES).

(7) Operational Fixed Microwave Applications filed for Closed Circuit Educational Television Service.

(8) Applications for Civil Air Patrol Stations, Aeronautical Radionavigation Stations and for Aeronautical Search and Rescue Stations.

(9) Applications for license to cover construction permit.

[*§ 1.1115 amended in I(63)-10; (a) amended eff. 8-1-66, I(63)-12*]

§ 1.1117 Schedule of fees for commercial radio operator examinations and licensing.

(a) Except as provided in paragraphs (b) and (c) of this section, applications filed for commercial radio operator examinations and licensing shall be accompanied by the fees prescribed below:

Applications for new operator license:

First-class license, either radiotelephone or radiotelegraph	$5
Second-class license, either radiotelephone or radiotelegraph	4
Third-class permit, either radiotelephone or radiotelegraph	3
Restricted radiotelephone permit	2
Application for renewal of operator license	2
Application for endorsement of operator license	2
Application for duplicate license or for replacement license	2

(b) No fee need accompany an application for a verification card (FCC Form 758-F) or for a verified statement (FCC Form 759).

(c) Whenever an application requests both an operator license and an endorsement the required fee will be the fee prescribed for the license document involved.

[*§ 1.1117 as amended eff. 1-3-66; I(63)-10*]

§ 1.1119 Experimental Radio Services (other than Broadcast).

Fees are not required in the case of applications filed in the Experimental Radio Services (other than Broadcast).

APPEALS OF COMMISSION DECISIONS

Mr. JONAS. I have only one other general question.

Do any of your major decisions receive universal approval by the contestants? Do you satisfy them all?

Mr. HYDE. No. The issues in which the FCC deals, seem to be the kind that generate differences of opinion, some of them pretty sharp. I would say this: There are many situations in which we must make decisions where you would have to concede that reasonable people might have different views. Our decisions generally do not have to do with what is right or wrong but are rather in the realm of judgment or discretion.

EXPEDITING COMMISSION DECISIONS

Mr. JONAS. That being so, and I suspected that would be the answer, has the Commission given any consideration to the advisability of

speeding up its own decisionmaking process with the understanding that you are not going to satisfy everybody, regardless of what the decision is? Why not go ahead and make one instead of studying it ad infinitum?

Mr. HYDE. If there is one policy that I have supported as strongly as it is within my power to do so, it is to get decisions made.

Mr. JONAS. You might as well. What is the use studying something from now on forever; you are going to have to make a decision. The thing that worries me, and maybe I am wrong, but I get the impression from your statement that you are just constantly and continuously studying these problems and never make a decision.

Mr. HYDE. Congressman, I think our record is better than that.

Mr. JONAS. Let me call your attention to page 9. You tell us that sometime ago the Commission established a group to do something. They made three separate alternative suggestions. They have been reported to the Commission and the Commission is going to decide some of these days what to instruct the staff to do next.

Mr. HYDE. We will probably decide to do that next week.

Mr. JONAS. When was this "sometime ago"?

Mr. HYDE. Shortly after our previous meeting with you folks here.

Mr. JONAS. About a year ago?

Mr. HYDE. That is right.

Mr. JONAS. When were the three alternatives investigated?

Mr. HYDE. They have been investigated.

Mr. JONAS. When were the results made known to the Commission?

Mr. HYDE. Since the first of this year.

Mr. COX. Less than a month ago.

Mr. HYDE. Yes.

Mr. JONAS. Maybe you are on the target on this but that is a rather general statement that does not give us much information as to how fast you are moving.

Mr. HYDE. I would like to give you a more specific one. Commissioner Cox made a review recently.

Mr. JONAS. While he is doing that, let him discuss the illustration on page 8. More than a year ago you say the Commission decided to make an investigation. That was made, and now by the end of this year the results should be available. That is 2 years.

Mr. HYDE. That has to do with sharing of VHF channel.

Mrs. JONAS. I understand, but does that take 2 years to make a decision?

Mr. HYDE. Yes, it does.

Mr. EVINS. In your justification, Mr. Chairman, you state that you have two or three lawsuits pending in the U.S. Supreme Court on certiorari.

Mr. HYDE. That is right.

Mr. JONAS. If you are going to get a lawsuit, you might as well face it and get it behind you.

Mr. HYDE. Yes, sir.

Mr. JONAS. Most of these cases that are contested are going to be contested in the courts anyway. I am just raising the question. I am not a Commissioner. I don't know how much time it takes but it seems to me that there is delay after delay and we might as well go ahead and face this issue, make a decision.

Mr. HYDE. There has not been any refusal of the Commission to face up to the issues in this area. It has taken time to get the engineering factual background before us.

Mr. BARTLEY. Field tests.

Mr. HYDE. It is necessary to make field tests to observe the operation. I would include this in engineering studies.

This thing has not dragged at all. I am sure that if you were to——

Mr. GIAIMO. Would you yield at this point?

Mr. JONAS. Just 1 minute.

I am not pointing out these two particular things. It is the impression I get from people who write me. Why does it take so long to get some decision made?

Mr. HYDE. There was——

DECISION ON LAND MOBILE USE OF TV FREQUENCIES

Mr. GIAIMO. Would you yield?

Is it not so, Mr. Chairman, that to get back to what Mr. Jonas said, the time has come to really make some decisions on this knotty problem?

I am not an expert here, but the way I see it, it is not really a question of engineering or further studies. It is a basic question of a conflict between the use of the space in this particular instance he is talking about. And naturally, I assume the UHF people are violently opposed to your making a decision in this area, but you have got to make these knotty decisions as to what is best for the public interest.

Mr. HYDE. Congressman, we have made the decision in principle to undertake a study of how to use space in this area. The problem of how to use it, what part of it, under what conditions, whether geographic sharing or whether it should be removal of stations off the air is a very complex one.

Mr. GIAIMO. The time of decision has arrived. In fact, I think it is passed.

Mr. HYDE. We are not procrastinating in that at all. We are moving just as fast as the nature of the problem will permit. I think this will be apparent as we get the papers before you.

Mr. GIAIMO. Except in answer to Mr. Jonas' question, general questions concerning the material on page 9 of your statement about establishing a group to study, you really told us this same thing last year. Now the year has passed and we are still studying it.

Mr. HYDE. Not really. Last year I told you we were prepared to study the feasibility of UHF questions and we are doing it.

EDUCATIONAL TV WORKLOAD

Mr. MARSH. How much additional load is being placed on the Commission because of the number of increased applications of educational television stations?

Mr. HYDE. There is not a great volume in that area. Educational TV is a matter of great interest to us. We do have a specialist in that area, Dr. Hilliard. We have had to give considerable attention to policy developed in this area. We were called upon to submit comments on the President's recommendation for Public Broadcasting Corporation.

Mr. HYDE. We do not have a high volume of applications such as we do in other services.

Mr. MARSH. Will the Public Broadcasting, ETV arrangement, will that in any way increase your workload?

Mr. HYDE. Yes; there will be some increase but not in the kind of volumes that we are talking about when we mention mobile services.

Mr. MARSH. You do not foresee a large increase in costs because of that?

Mr. HYDE. No. Not a real large one. No.

Mr. MARSH. One question off the record.

(Discussion off the record.)

Mr. MARSH. Back on the record.

I would like to say we appreciate the cooperation of the Commission working out the problems on the educational television station when this ran into a problem in the Shenandoah Valley.

Mr. HYDE. There will be some increases in the filing of educational applications if Congress should appropriate additional funds for matching grants. This in the past has stimulated an increase.

FEE SCHEDULE

Mr. WYMAN. Mr. Chairman, in the table that you put in the record in response to Mr. Jonas' request for rates that were set up, as I understand it, in 1964, did this table involve an increase over previous rates?

Mr. HYDE. This was the first. This table represents the establishment of a filing fee schedule. We did not have a charge prior to that time.

Mr. WYMAN. Did you participate in the deliberations that led to the structure of rates that were imposed in that table?

Mr. HYDE. I did, sir.

Mr. WYMAN. How much of a percentage of costs to a given applicant for a license, or for a major action by the FCC, would a filing fee involve in relation to his legal fees and other fees?

Mr. WYMAN. It would be one-hundredth of 1 percent?

Mr. HYDE. I do not have a percentage. We did not calculate a relationship there, but I can tell you that a fee of $150 or $10 is going to be a rather low charge in relation to other costs.

Mr. WYMAN. It would be very, very small?

Mr. HYDE. It would.

Mr. WYMAN. Does the Commission have an opinion with regard to fee schedules? Does the Commission think Congress should impose a fee schedule that is somewhat more relastic and perhaps pick up a half of the cost of appropriations annually to the FCC?

Mr. HYDE. I am not prepared to answer that question. We have not discussed it for that purpose.

Mr. JONAS. You can do that without congressional action?

Mr. HYDE. He asked me, did the Commission have a viewpoint as to whether or not a higher level of charges should be made.

Mr. WYMAN. I am not trying to put you in the middle at all. I understand from what you said that you started this in 1964. You did not particularly want to get into it and you thought perhaps if Congress felt that higher fees should be charged, then Congress ought

to act. I am asking you, do you think Congress ought to act to increase these fees?

Mr. HYDE. I would think that Congress might very properly make the policy here if there is to be any change in the basic concept.

Mr. WYMAN. Do you think the fees could be increased by action of Congress or by action of the Commission without damage to the industry?

Mr. HYDE. I believe we have it within our discretion to change the fee schedule which we promulgated under our present authority.

Mr. WYMAN. I understand that and I agree with you. Do you think it could be done so as to produce more revenue for the Commission without damage to the industry?

Mr. HYDE. That is one of the problems. It would not produce any more revenue for us. We get none of these fees. I think some changes could be made without damage to the industry.

Mr. WYMAN. I know, but it all comes out of the same place, the taxpayers. The fees go into the general fund?

Mr. HYDE. I would like to have that $4 million we collect in addition to our budget.

Mr. JONAS. You mean reduce it by that.

Mr. HYDE. That is not the way I put it.

Mr. JONAS. I do not believe you did.

Mr. BARTLEY. Mr. Chairman, I am a little bit confused about what the fee schedules could be under the existing law. They are supposed to be geared to the cost of processing.

Not to the value of the service. Congress could do something about that. The limitation, as I understand it, is that it is limited to the cost of the processing itself.

Mr. JONAS. Would you yield?

We cannot do anything about that. We are not a legislative committee. We just raise the question for discussion.

Mr. BARTLEY. Mr. Thomas kept telling me that he legislated this.

Mr. HYDE. I think he did in 1952.

NEW TECHNOLOGICAL DEVELOPMENTS

Mr. WYMAN. I would think as an observation, Mr. Chairman, that it might be possible to relate the charges imposed to some other factors than merely reflection of the filing costs administratively. We are trying to find enough money to meet the cost of the war and everything else right now.

Be that as it may, Mr. Chairman, just two other questions.

You said in your statement that you were at the doorway to many more technological innovations that will have a very significant impact on our way of living and on the economy of this country. You have me fascinated. Tell us something about that.

SATELLITES FOR DOMESTIC PURPOSES

Mr. HYDE. Yes, I would like to mention one of them.

What should be the use of satellite technology for domestic purposes? There are tremendous questions here. Should we authorize present carriers to use the satellite technology? Should we authorize the nonprofit corporation, such as the Ford Foundation plan? There

are many possibilities in this technology, all of which will raise social and economic questions for study. This is probably the most exciting one that is in the offing. We do have an investigation as to what should be the use of satellites in domestic purposes. We have a policy insofar as international communications are concerned. It is provided in the Satellite Communications Act of 1962. Pursuant to that, you know, Comsat was organized. Then Comsat in conjunction with other countries established what is known as intelset, an international consortium. There are a lot of questions, such as should domestic communications by satellite be provided by Comsat, by other carriers, or through some agency connected with the international group.

Mr. WYMAN. Are there other things that do not relate to satellites in space that are startling in themselves?

OTHER POSSIBLE FUTURE COMMUNICATIONS USES

Mr. HYDE. There are. Communications statesmen or perhaps prophets are envisioning the possibility of having each home a sort of a communications center, or having a center in the home, that would provide facilities to do your banking, marketing, deliver your newspaper, provide your access to current movies, provide access to television as is now the fact with the community antenna.

Mr. WYMAN. How do you get that newspaper in there? It comes in how?

Mr. HYDE. In a machine, facsimile. As a matter of fact, some years ago we did authorize what was called facsimile broadcasting. It was a bit cumbersome and never exploited, but now with improved techniques, engineers see the possiblity of delivering at your home a facsimile of a page that would be prepared at some central office.

Mr. WYMAN. If you wanted to permanently retain this in the home, there would be a printer as part of this equipment?

Mr. HYDE. Even a more convenient device than that has been suggested, perhaps the convenience of having equipment there to record the message in your absence, make it available to you when you come in.

Another application of storage and retrieval would be that of having a signal transmitted with the news broadcast which would activate your tape recorder to record it so that when you came back you could play the tape through your television set and see it at a time convenient to you.

REVIEW OF CATV REGULATIONS

Mr. WYMAN. The CATV regulations that you have promulgated do not deviate from your statutory authority; do they?

Mr. HYDE. All of our regulations are based on our authority subject to review by the court.

Mr. WYMAN. I know that.

Mr. BARTLEY. Some of us don't think so.

Mr. LOEVINGER. There is some dispute about that, considerable litigation.

Mr. WYMAN. That is all, Mr. Chairman.

Mr. EVINS. Mr. Talcott, any general questions?

COLLECTION OF FEES

Mr. TALCOTT. With regard to the fee schedule that you are going to submit, I would like to have some comparative fee schedule. How much does CBS pay for their license compared with a little operator of a license in a small town?

Mr. HYDE. Our schedule will include a breakdown giving the charges for all classes of stations. The network you mentioned, CBS, does have individual stations which are subject to this fee schedule. They will be indicated by the document that has been requested.

Mr. COX. The fees are in fact the same for WCBS in New York as they are for the station in Glendive, Mont.

Mr. TALCOTT. I think we should be interested not only in the amount of revenue that we can obtain for financing Government costs, or the costs of your commission, but the fees should be fair and equitable.

Mr. BARTLEY. We attempted that, Mr. Chairman.

I attempted that at the time the fee schedule was put in and would have recommended that the fee for radio broadcasting and television be based on their own valuation through their rate card, whatever the rate card said. The legal opinion was that we could not do that.

AUTHORITY FOR COLLECTION OF FEES

Mr. WYMAN. Would you yield there?

I read from the statute:

> It is the sense of Congress, and so forth, in respect to your rates, title 5 says that you shall prescribe therefore such fee, charge, or price, if any, as he shall determine, in case none exists, or redetermine in case of an existing one to be fair and equitable, taking into consideration direct and indirect costs to the Government, value to the recipient, public policy, and so on.

Mr. BARTLEY. As I recall it, the Budget Bureau ruled out the use.

Mr. HYDE. There was a difference of opinion among the Commissioners at the time the policy was established. The rules that were promulgated did represent a compromise in which the filing fee concept was basic rather than some relationship to earnings or revenue.

Mr. WYMAN. If you had a renewal fee in a station that really bloomed, shouldn't that renewal fee be increased proportionately?

Mr. HYDE. There are some tremendous policy questions involved in the question that you put there. Should the Commission undertake to establish itself as a tax authority? Should we presume to assess some charge against earnings? Rather, we stayed in the area of the filing fee concept. If you are going into this other area that you mentioned, I would think it would be something that ought to be reviewed by Congress.

My colleague, Commissioner Johnson, wants to discuss this subject.

Mr. EVINS. Commissioner.

Mr. JOHNSON. Thank you.

Since each of you has raised the question of filing fees, it seemed to me perhaps worthwhile to indicate there is some divergence of view on the Commission.

It is not uncommon for television stations in large markets to be transferred for, say, $20 million. The industry across the board is earning some $3 billion a year—taking this in as revenues. They are indi-

vidually paying license fees, I think, of roughly $33 a year. It is not simply a small part of their operating costs, it is de minimis. They do not see it at all. They spend far more than that on coffee in the executive suite. The telephone company is now taking in some $13 billion a year. The land mobile radio users, who are paying some $2 a year in license fees, claim to be contributing billions of dollars to the gross national product and I am sure they are in terms of value of radio to them.

My own view is that the user fee principle is eminently sound and there is simply no justification whatsoever for making the taxpayer pay the cost of running a regulatory commission like the FCC, or other comparable commissions, most of the activities of which go to service the industry.

The kinds of services provided by the Field Engineering Bureau, for example, would have to be provided by the broadcaster at his own out-of-pocket expense or by the industry or by some trade association were it not for the existence of the FCC. The budget of the agency is relatively small. I spent more on a single ship as Maritime Administrator than we spend here in a year in all activities of the FCC. I think that to take these multimillion-dollar industries and fail to assess them enough to pay this very modest budget of this agency is a very difficult fiscal decision to justify to the American taxpayer.

Mr. WYMAN. Mr. Talcott, if you will yield.

In New Hampshire, for example, we pay for our public utility regulatory commission out of charges on the regulated companies. The whole thing, assessments. I heartily agree with the statement the Commissioner just made, Mr. Chairman. I hope the legislative committee will do something about that.

SECURITY AND PROTECTION OF COMMUNICATIONS SYSTEMS

Mr. TALCOTT. Just one other question.

What do you do about security precautions? In the city of Washington for instance, a saboteur with 10 bombs could probably put out the whole communications system, telephone, radio, television, and all. Do you have any jurisdiction over the security of the communications system in the cities of our country?

Mr. HYDE. There is extensive planning in this area. We have a member of the Commission who has a special assignment in defense matters.

Mr. TALCOTT. This is not just defense. This is a Dr. Martin Luther King or Stokely Carmichael civil disorder matter—not them particularly but local saboteurs that could for one purpose or another seriously interrupt our whole communications system. It might occur at a time of national defense but it could occur entirely independently of foreign attack.

Mr. HYDE. There is considerable activity in this business of preparing against emergency in relation to all services. The telephone companies, for instance, do make provision for switching outside of the center. They do have the switching centers hardened, as they are called. That means protected against explosives.

In the mobile services, I mentioned it in my statement here—we cooperate in providing an allocation of frequencies which will permit

the police officer to change channels and thereby, we hope, make it more difficult for the unauthorized listeners to follow him.

Mr. TALCOTT. Your answer then is that you do have some jurisdiction?

Mr. HYDE. We do have some jurisdiction.

Mr. TALCOTT. You are aware of the serious problem?

Mr. HYDE. We are. As a matter of fact, this consideration was one of the reasons why although the time may have seemed long, we did push this improvement in police allocations as expeditiously as we did. We wanted to provide as expeditiously as we could against the challenges that are always coming up in these times.

Mr. TALCOTT. I have no other questions now.

METHOD FOR ASSESSING FEES

Mr. EVINS. Mr. Chairman, with respect to the fees charged by the Commission, the Federal Deposit Insurance Corporation and the Comptroller charge banks for examinations. The examination fee is based on the size of the bank. If it is a big bank they charge more, with a smaller bank it is less. Do you charge fees for inspection?

Mr. HYDE. I think we have a small one for ship inspections.

Mr. EVINS. Ship inspections only?

Mr. PLUMMER. Yes, sir.

Mr. JONAS. Nothing for broadcast station inspection?

Mr. HYDE. No charge.

Mr. EVINS. Your inspections are limited.

Mr. HYDE. That is right.

Mr. EVINS. You spot check and do not cover the waterfront.

Mr. HYDE. We couldn't.

Mr. BARTLEY. I think the only fee charged for ship inspections is for overtime services when it is necessary for the convenience of the ship; otherwise I think they are free.

Mr. PLUMMER. That is right.

Mr. EVINS. I think the Commission may want to look into this matter of revising and updating its fee schedules.

REDUCTIONS UNDER P.L. 90–218

Mr. Chairman, what about the 2-percent and 10-percent law that was passed in the closing days of last year; how did this affect the Commission?

Mr. SOLAN. We were reduced $462,000.

Mr. EVINS. How many unfilled jobs does the Commission have at this time?

Mr. SOLAN. We have about 30 that are unfilled now. We will have to attrition down about another 15 or so to live within the funds available after the reduction.

FUNDING OF EMERGENCY COMMUNICATIONS ACTIVITIES

Mr. EVINS. In your budget for 1969 you are asking for 43 more positions. I note 21 transfers. Tell us about the 21 transferred from the Office of Emergency Planning and Office of Civil Defense; are you taking over these jobs from them?

Mr. HYDE. Yes, sir.

Mr. EVINS. You are taking over the services and functions.

Mr. SOLAN. We supplied the manpower but now we are having to fund it.

Mr. LOEVINGER. We have had the men and manpower. There will be no change of manpower, personnel, or of function. It is simply a bookkeeping change in method of getting funds.

Mr. EVINS. We appropriate money to the Office of Civil Defense and the Office of Emergency Planning and they give the money to you to do the job?

Mr. LOEVINGER. Yes, sir. I have been supervising the people who have been doing the work. They have been doing it as a part of the Commission function.

Mr. EVINS. Is it your view that the corresponding reductions should be made in the other two agencies?

Mr. JONAS. I do not remember any reduction in OEP's budget for this.

Mr. SOLAN. OEP did not fund anything last year.

Mr. JONAS. Was this in last year's budget, same item? Why do you emphasize it this year?

Mr. LOEVINGER. As a matter of fact, we lost OEP financing last year and had to take funds out of something else. Otherwise we would have an activity which was simply being dropped which we couldn't do. We could neither stop paying salaries to employees of many years' standing, nor abandon a function that was imposed on us by executive order and statute.

It came out of other funds.

FISCAL YEAR 1968 TRANSFERS FROM OEP AND OCD

Mr. EVINS. How much was transferred to the Federal Communications Commission last year by the Office of Emergency Planning?

Mr. LOEVINGER. OEP. None. OCD gave us what?

Mr. SOLAN. $320,000.

Mr. EVINS. How much?

Mr. SOLAN. $320,000 from OCD.

Mr. EVINS. When was this executive order issued imposing this responsibility?

Mr. LOEVINGER. Early 1960's. 1961 or 1962.

Mr. EVINS. Have you been performing it as a delegated agency over the years?

Mr. LOEVINGER. Yes, sir.

STATUS OF A.T. & T. INVESTIGATION

Mr. EVINS. What is the status of the A.T. & T. investigation? This has been underway several years with a lot of public interest in it.

Mr. HYDE. The first phase had to do with a determination of or definition of the rate base, and overall rate of return.

We also after the first notice undertook to resolve the matter of separations or allocations of revenue requirements as between interstate and intrastate. We completed the first phase.

Mr. EVINS. When was the study initiated?

Mr. HYDE. In the fall of 1965. October 1965.

I might say, Mr. Chairman, that considering the size and scope of this and even in the light of projections of how much time was going to be taken, the Commission handled it with remarkable expedition. I think it was 21 or 22 months from the time the hearings began until we had a decision.

Mr. EVINS. You are looking at the rate base. What was the result of your investigation of the rate base structure?

Mr. HYDE. I will have to supply you the text of it. I cannot give you the figure here. We did establish a policy in this area for the first time in the regulatory history of the Commission. We did for the first time establish on a hearing basis a rate of return, a range of 7 to 7½ percent on the rate base as determined by the Commission. We resolved a number of long-pending issues.

Mr. EVINS. You established and announced a rate of return.

Mr. HYDE. Right.

Mr. EVINS. Beside the rate of return, what else has the Commission determined in this investigation?

Mr. HYDE. We made a ruling on the matter of separations. Actually we have at the same time issued a notice of rulemaking to take a further look at some aspects of that. We do have a presently operable separations policy. The further second phase of the study is underway. I cannot give you an estimate as to when we will conclude it, but I expect that we will follow through on that just as we did on the first phase.

UNOBLIGATED FUNDS IN FISCAL YEAR 1968

Mr. EVINS. What about your unobligated balances, if any?

Mr. HYDE. We are in the red right now.

Mr. EVINS. No carryover?

Mr. HYDE. No carryover.

Mr. EVINS. This has all been very interesting. You want 43 more jobs and about $2 million more. Let us go over these statements here. The budget reflects great concern that sufficient resources be provided. This has been the problem for years. You state that communication technology is undergoing dynamic changes. The dramatic increase in the radio and television industry was pointed out. There has also been a sudden growth of community antenna television service.

All of this supplements the Commissioner's fine statement. The day-to-day workload continues to grow at a rapid pace. Hasn't this always been the case?

Mr. HYDE. It has.

COMPUTER COMMUNICATIONS POLICY

Mr. EVINS. Then you state that a far-reaching inquiry into the relationship between computers and telecommunications has been initiated, and the Commission must also be given sufficient resources to implement the findings of this study.

Would it not be pertinent to let Congress take a look at the findings and then decide inwhat area you should proceed?

Mr. HYDE. Mr. Chairman, there may be some areas where legislation might be required. Our study comprehends the need for studying Com-

mission regulatory policy within our present statutory authority and also the possibility of making recommendations to Congress.

RESEARCH AND POLICY STUDIES

Mr. EVINS. In your "Other objects" section, in connection with your studies, this is one of the main things that you are interested in. More funds for this purpose.

Mr. HYDE. That is one page 128.

Mr. EVINS. Pages 128 and 129.

In 1968 the Commission requested and was granted funds to initiate major research and policy studies. Numerous independent groups have recommended more research programs requiring millions of dollars annually. How much does the Commission envision, if all of its studies are implemented, this would cost?

Mr. HYDE. We are asking for an additional $400,000 which would mean an investment of $1 million under our figure.

Mr. EVINS. The second phase would be $1.010 million. The Commission is presently engaged in developing long-range research and policy studies to define the major problems. You have not even defined the major problems.

Mr. HYDE. We have done considerable work in this area. We are now discussing it with the Budget Bureau.

Mr. EVINS. You picture these things that Mr. Wyman mentioned; picture telephones, facsimile reproduction of newspapers and magazines, electronic mail delivery, and merchandising via communications media. Is industry studying these things?

Mr. HYDE. Yes, sir.

Mr. EVINS. They are proposing these matters.

Mr. HYDE. They are, indeed; but I do take some satisfaction in the fact that the Commission initiated this study on the relationship of communications and computers before any other agency and before there was any general recognition of it by the industry.

Mr. EVINS. With all the expertise the Commission and the industry have, are you not able to come up with the answers to these problems without separate appropriations for more studies and reports?

You have not defined the problem.

Mr. HYDE. No. Mr. Chairman, you have combined two elements in that observation of yours. The task of analyzing the materials being submitted to us pursuant to our notice of inquiry under the computers inquiry would be a challenge to one of your better research organizations. Your observation about our research program in general, one of the things that we learned when we began to make plans to take advantage of the resources that have allowed us is that the business of conducting a research program was a highly specialized thing in itself.

Mr. EVINS. When we appropriate for this, are you going to let a contract to private industry to come up with a report for you?

Mr. HYDE. It won't be quite as simple as that. We are going to have to monitor and give direction and scope to this thing. We were well aware that if we started to just fund separate studies such as this one on computers and communications, we could very well have dissipated our money in several directions without getting the kind of overall

policy development that we need. That is one of the reasons why it has taken a little longer than might seem at first to be necessary.

Mr. EVINS. Isn't the Office of Telecommunications making studies in this area also?

Mr. HYDE. I think the fact that they are making their studies in this area is one of the reasons why the Budget Bureau is very much interested in looking at studies proposed by each of the agencies having any jurisdiction in the area. I think they expect to do a coordinating service there. I am speaking of the Budget Bureau.

Mr. EVINS. Place this text on research contracts in the record at this point, pages 128, 129, and 130.

(The pages follow:)

CONTRACTUAL RESEARCH STUDIES

In fiscal year 1968, the FCC requested, and was granted, funds to initiate a continuing major research and policy studies effort. Numerous independent groups have recommended a communications research program requiring millions of dollars annually. In the first year of the FCC's program, the Commission felt that $610,000 would be adequate for an initial survey of research needs and for meeting immediate problems which have been previously discussed with the Appropriations Committees of the Congress. Once the program is more fully defined, of course, its execution may well require many times that amount. As a second year's effort, the Commission is requesting $1,010,000 (an increase of $400,000).

The Commission is presently engaged in the development of a long-range research and policy studies program. The principal objectives of this program include the definition of major problems currently before the Commission and the anticipation of major issues which will develop in the future as an outgrowth of the rapid developments in technology. This program also will provide the Commission with appropriate data on alternative courses of action which could be taken effectively in resolving complex regulatory issues before they become imminent crises. The accommodation of new developments into the national communications structure involves difficult choices—difficult because the fixing upon one or more promising alternatives must generally be accomplished, like all useful planning, well before results flowing from experiences are available.

Communications experts predict that within the next few decades, it will become possible and perhaps commonplace to have in the home or office (in addition to television and radio sets), picturephone, facsimile reproduction of newspapers and magazines, electronic mail delivery, merchandising via communications media, and the means for electronic access to computers. Also, practically instantaneous reproduction and exchanges of documents between persons separated by many miles, and even continents. Data processing experts anticipate that there will be an increasing link between bulk data transmission and computers, e.g., man-to-computer communications in the nature of inquiry and response (credit checks, airline reservations, branch banking, stock quotations, etc.), information retrieval (library files, reference material, etc.), and computer-to-computer communications.

With these new developments, there may be fundamental changes in the methodology and techniques of affording communications service to the public, and in other aspects of communications technology. Until quite recently, the principal means of rendering this service have been the terrestrial facilities, both cable and microwave. With the advent of CATV systems, cable distribution of television and radio signals is becoming increasingly widespread. International communications by satellite is already in being and there are proposals pending before the Commission for a domestic satellite system or systems. Moreover, it appears that new distribution techniques may be developing in the microwave fields, using frequencies above 10 gigacycles. In addition, non-Government laboratories are investigating a radio pole line concept which also would use frequencies above 10 gigacycles for high-capacity microwave service via short hop (2 to 5 miles) repeaters atop metal poles approximately 70 feet tall. The development of coaxial cables with greatly expanded capacity over present cables also is underway. Significantly, too, there shortly may be developed millimeter waveguides with very high communications capacity. Also, work is presently under-

way looking toward the development of communications by laser beams, whose capacity is expected to be even greater. The critical significance of the latter two techniques in the context we are now considering is that these new forms do not require use of the valuable radio frequency specrtum, thus freeing this resource for other needs.

Major advances in electronic technology are certain to have a far-reaching impact upon our communications plant. While our communications requirements are thus certain to multiply, the radio frequency spectrum which must be used to carry much of these communications is limited.

Our long-range concern is with all types of communications and with the impact of developing technology, the extent to which distributional means alternative to radio (microwave and broadcast) might be employed, the resultant economies of spectrum utilization and alternative allocations of released frequencies, the comparative economics and technology of the various modes of communication, the availability of components for the newer modes, and the desirability of competition versus nonduplication of facilities. If the Commission is to be in a position to make the long-sighted decisions which these extremely difficult and complex matters will require, it is absolutely essential that it have the financial resources to permit the conduct of extensive research studies into the numerous and intricate scientific, economic, and social aspects of problems associated with new developments in communications technology. Research studies should be accomplished well in advance of the actual introduction to the public of such new developments.

It is our belief, and that of others who have studied the matter, that any expenditures on research and planning in the telecommunications field will be returned many times over to the American people and their Government in increased gross national product and the taxes it produces. There are also untold intangible benefits such as improved service, and safety for the general public.

An increase of $5,000 is requested for security investigations to cover the additional staff, including the emergency communications activities previously funded from other sources.

Expenditures in all other areas will be held to the fiscal year 1968 level except for a minor increase for other miscellaneous contractual services.

EMPLOYMENT INCREASE

Mr. EVINS. This ties in with what the chairman has requested.

Positions are increased by 43-plus, including 21 transferred. Then you show an increase of 74 employees.

Mr. SOLAN. In average employment. Increasing employment of the existing staff would bring the average employment level up without adding new positions, keeping the positions filled.

Mr. EVINS. You have not had to let any employees off, have you?

Mr. SOLAN. We had to leave positions vacant.

Mr. EVINS. You still have some vacancies now. How many at this time?

Mr. SOLAN. We have about 30 now and must let 10 to 15 more go unfilled.

Mr. EVINS. Thirty unfilled jobs at this time?

Mr. SOLAN. Right.

Mr. EVINS. I believe the chairman asked us to come in for a full committee meeting at a quarter to twelve. Suppose we suspend until 1:15.

AFTERNOON SESSION

Mr. EVINS. The committee will come to order. We will resume our hearings with officials of the Federal Communications Commission.

SUMMARY OF INCREASES

This morning we had a rather general discussion of the overall problems. This afternoon we will take a look at the specifics of the budget. The summary of increases is shown I believe on pages 7 through 14.

We will place these pages in the record.

(The pages follow:)

SUMMARY OF INCREASES

Personnel compensation	$1,441,352
Pay increase legislation	196,413
Maintenance of fiscal year 1968 staff	377,270
Activities previously funded by other agencies	296,064
Employment increases for fiscal year 1969	571,605

Personnel compensation increases by activity

I. Commissioners:

Pay increase legislation	14,165
Maintenance of fiscal year 1968 staff	13,714
Periodic step increases and one extra days' salary in fiscal year 1969.	
Employment increases for fiscal year 1969---1 man-year	8,000

Although no new postitions are proposed, a slight increase in employment will result from a reduction in the time professional staff positions will remain unfilled.

Total	35,879

II. Broadcast activity:

Pay increase legislation	30,717
Maintenance of fiscal year 1968 staff	77,895
Periodic step increases, 1 extra day's salary in fiscal year 1969, and promotions for trainee-level employees.	
Employment increases for fiscal year 1969--9.5 man-years	110,759

Only 1 new position is proposed for the broadcast activity. This increase will be used to simplify the present AM rules structure opening the door for more economical station operation and application processing. Lengthy rules will be condensed and clarified to prevent misinterpretation. While no additional positions are proposed in any other area, it is proposed to increase average employment time by 4.2 in the application processing area, 3.3 in the hearing area and 1 in the education and research area by reducing the period of lapse on vacant positions. It is anticipated that these increases will prevent backlogs from increasing further and possibly permit some reductions.

Total	219,371

III. Common carrier activity:

Pay increase legislation	22,383
Maintenance of fiscal year 1968 staff	53,858
Employment increases for fiscal year 1969--11.3 man-year	118,073

The 11.3 man-year increase proposed for this activity is to be spread throughout the various program areas. For instance, 2 man-years will be used to develop new procedures in the ratemaking process utilizing recent developments in economic and computational techniques. A 1.5 man-year increase will

be assigned to assist in the handling of the inquiry into the regulatory and policy problems presented by the interdependence of computer and communication services and facilities. Similar small increases are explained in the common carrier section of this document.

Total	$194,314

IV. Safety and special radio activity:

Pay increase legislation	17,038
Maintenance of fiscal year 1968 staff	33,567
Employment increases for fiscal year 1969, 5 man-years	57,469

The entire increase proposed for this activity will be assigned to regulatory functions, with particular emphasis on the land mobile radio services. This additional effort will be devoted to the exploration and implementation of methods to increase the use of frequency space now available to these services through channel splitting, geographic or other sharing, and through other operating techniques. The feasibility of sharing VHF and UHF television space also will be investigated. Less than 1 additional man-year of effort will be assigned to regulatory work in the aviation and marine services.

Total	108,074

V. Field engineering activity:

Pay increase legislation	49,100
Maintenance of fiscal year 1968 staff	93,397
Employment increases for fiscal year 1969, 7.3 man-years	76,278

In fiscal year 1967, the percentage of broadcast stations inspected during their license term was only 51 percent. Because of the increase in the number of stations, the increase requested is necessary merely to maintain the present relatively low percentage of inspections, 4 man-years.

The number and complexity of interference investigations has been steadily increasing over the past 5 years. This is to be expected in view of the technological expansion, population increases, and the increasing number of transmitters on the air. The public, industry, and Government demand relief from this interference. Such relief can be provided only by an increase in staff resources devoted to investigating severe cases of interference, 3.3 man-years.

Total	218,775

VI. Research and planning in communications technology:

Pay increase legislation	13,624
Maintenance of fiscal year 1968 staff	24,053
Employment increases for fiscal year 1969, .4 man-years	4,180

This increase of less than 1 man-year will be utilized in the frequency management area.

Total	41,857

VII. Citizens radio services activity:

Pay increase legislation	12,526
Maintenance of fiscal year 1968 staff	16,698
Employment increases for fiscal year 1969, 2.9 man-years	30,302

This small increase in staff will be utilized almost entirely in efforts to reduce the disregard for the Commission's rules in these services. During fiscal year

1968, and again in fiscal year 1969, we will have a small field staff devoted to citizens service enforcement activities. The proposed staff increase will be used almost exclusively in the handling of enforcement cases referred for the imposition of sanctions and related activities. Less than one-half man-year of the increase will be used in rules and other regulatory work in these services.

Total ---------- $59,526

VIII. Community antenna TV activity:

Pay increase legislation ---------- 12,807

Maintenance of fiscal year 1968 staff ---------- 8,533

Employment increase for fiscal year 1969, 8.5 man-years ---------- 88,816

Community antenna television is the newest major service to come under Commission regulation. There are now 1,800 systems operating. 1,800 additional local franchises authorized but not yet in operation, and about 2,200 applications for franchises pending in approximately 1,200 cities. The Commission requires that a local franchise be obtained before it will accept any filing under its rules. With the large number of franchises already granted or pending, it is inevitable that the Commission's workload will be exceedingly heavy in fiscal year 1969. Staff limitations in fiscal year 1968 will necessitate the carrying over of many applications and petitions into fiscal year 1969. We propose staff increases of 2.5 man-years for processing applications and petitions and 6 man-years for the heavy hearing workload that is anticipated.

Total ---------- 110,156

IX. Support activities:

Pay increase legislation ---------- 24,053

Maintenance of fiscal year 1968 staff ---------- 55,555

Emergency communications activities previously funded by other agencies, 21.5 man-years ---------- 296,064

These activities have heretofore been financed through reimbursements from other agencies and are not, therefore, increased costs to the Government. Such activities do not relate to actual war, imminent or threatened war and conditions of international tension alone. They apply to other emergency conditions such as earthquakes, tornadoes, hurricanes, floods, fires, and so forth. If systems are developed to operate under the latter conditions they will function under war conditions. These responsibilities are placed on the Commission by the Communications Act and Executive Order 11092.

Employment increases in fiscal year 1969, 6.1 man-years ---------- 77,728

These estimates contain funds to finance a planning staff (4 man-years) for the Commission. This staff will review and coordinate program memoranda for submission to the Bureau of the Budget; coordinate Commission programs in research; initiate and conduct special studies; prepare projections of economic and other long-range effects of far reaching Commission inquiries and rulemaking matters.

An increase of 2.1 in average employment also is proposed for the increasing workloads in the Office of the General Counsel.

Total ---------- 453,400

Personnel benefits	$59,548
Other obligations	596,100
21. Travel and transportation of persons	55,000

The largest single item of increase is $25,000 for emergency communications activities now being funded through this budget. An increase of $14,200 is proposed for field engineering activities which have been deferred because of budget limitations in fiscal year 1968. Each other increase (shown on page 125) amounts to $4,000 or less.

22. Transportation of things	3,000

This increase covers only the addition of emergency communications activities.

23. Rents, communications and utility services	97,100

In 1969 the Commission will be required to pay an additional $60,000 in telephone service costs due to our move to a new building.

Mail costs will be $11,100 higher due to recent mail rate increases and an added $17,000 for emergency communications activities.

Teletypewriter costs will increase $4,000 due to rate increases.

An added $5,000 is requested for rental of quick-copy machines and other labor-saving devices.

24. Printing and reproduction	7,200

No increase is being requested for printing in fiscal year 1969 except to cover printing for emergency communications activities now to be funded from this appropriation.

25. Other services	407,500

In fiscal year 1968 the FCC requested, and was granted, funds to initiate a continuing major research and policy studies effort. The principal objectives of this program include the definition of major problems currently before the Commission and the anticipation of critical issues that will develop in the future as an outgrowth of the rapid developments in communications technology. This program will provide the Commission with appropriate data on alternative courses of action which could be taken in resolving complex regulatory issues before they become imminent crises. In the first year of this program $610,000 was provided. As a second year's effort, the Commission is requesting $1,010,000 (an increase of $400,000).

An additional $5,000 is required for security investigations and $2,500 for miscellaneous contractual services.

26. Supplies and materials	3,200

This small increase will provide necessary supplies for new employees.

31. Equipment	21,300

This increase will permit the procurement of replacement office machines and furniture which had to be deferred in fiscal year 1968 for budgetary reasons.

32. Land and structures	20,000

In fiscal year 1968 a number of grounds improvement and safety projects at our monitoring stations had to be cancelled. We hope to be able to complete this work in fiscal year 1969.

PERSONNEL COMPENSATION INCREASES

Mr. EVINS. Mr. Chairman, you indicate that $196,413 will be required for the pay act increases.

Mr. HYDE. Yes, sir.

Mr. EVINS. You lay this responsibility to the Congress.

Mr. HYDE. We do.

Mr. EVINS. Can you absorb some of it?

Mr. HYDE. Not under the conditions under which we are operating. I wish we could.

Mr. EVINS. Were you able to absorb some in 1968, and how much?

Mr. SOLAN. $462,000.

Mr. EVINS. Maintenance of the staff, you show an item of $377,000. What is that?

Mr. HYDE. That relates to the statutory increases.

Mr. EVINS. Activities previously funded by other agencies. We talked about this this morning.

Mr. HYDE. We did and I think it was pretty well described by Commissioner Loevinger.

Mr. EVINS. You have done the work, you have the personnel, and the appropriations have been transferred to you.

Mr. HYDE. That is correct.

Mr. EVINS. Employment increases, $571,000. Are those your own?

Mr. HYDE. We are responsible for those.

Mr. EVINS. This is $1,441,000 for pay increases and promotions.

Mr. HYDE. Right.

INCREASES BY ACTIVITY

Mr. EVINS. We will not ask any questions about the Commissioners. The pay increase of the broadcast activity is $30,000.

Mr. SOLAN. That is right.

Mr. EVINS. And statutory increases, $77,895.

Mr. HYDE. Right.

Mr. EVINS. We notice on page 8, only one new position is required in the AM rules structure area. You say while no additional positions are proposed in other broadcast areas, we do propose to increase average employment time by 4.2 in the application area, 3.3 in the hearing area, and 1.0 in the research field, for a total increase of $219,371.

"Common carrier activity" pay increases are $22,383. Here you have an 11.3 man-year increase in the common carrier activity.

"Safety and special radio activity" is broken down to pay increases of $17,038, within-grade promotions, $33,567, and employment increases, $57,469. You say that this additional effort will be devoted to the exploration of methods to increase the use of frequency space by splitting channels, geographic, or other sharing, and through other operating techniques.

Is it possible to transfer some of your personnel between divisions?

Mr. HYDE. We do; but not as much as might seem possible in theory. They do tend to become specialized and even though we would wish the employees to get more general training, the priorities of work in each one of these places, and we do not have any that are really lacking in things to do—there is not as much opportunity for transfers as might seem possible.

Mr. EVINS. In the field engineering you are asking for an increase of 7.3 man-years, and a total increase of $218,775. You point out that the broadcast stations inspected during their license term—that is 3 years; is it not?

Mr. HYDE. Yes.

Mr. EVINS. Was 51 percent.

Mr. HYDE. That is all.

Mr. EVINS. You state that because of an increase in the number of stations, the increase requested is necessary merely to maintain the present relatively low percentage of inspections.

Mr. HYDE. That is right.

Mr. EVINS. How long does it take to inspect a station? You go in and you have nice carpeting and a good reception with pretty music.

Mr. HYDE. It varies. If I may, I would have Mr. Plummer answer that.

Mr. EVINS. Tell us what you do.

Mr. PLUMMER. First, let me say that is not the door we come through, the pretty carpeted one. We go out to the plant in a stone house somewhere to inspect the transmitting equipment and we do get back into that plush carpet area to look at the log. We have to look at the logkeeping, we have to see if all the meters are read right and agree with the logkeeping. We make some technical measurements. We can spend all the way from 3 hours to about a day.

Mr. EVINS. You do not charge them anything for giving them this inspection?

Mr. PLUMMER. No.

Mr. EVINS. Do you write up a report and say this is an excellent station?

Mr. PLUMMER. I wish they were all excellent.

Mr. EVINS. What do you find in these inspections?

Mr. PLUMMER. We find that in a certain percentage of them there are some basic violations of the rules, like they do not have an operator on duty sometimes an improper operator, sometimes they do not have the transmitters——

Mr. EVINS. If an operator goes out to get coffee while the record is playing, is there anything wrong with this?

Mr. PLUMMER. If he has a license there should be a licensed operator on duty all the time according to the act.

Mr. EVINS. Are most of the stations well operated?

Mr. PLUMMER. First let me say my boys have authority to not inspect the stations that they think are good stations.

Mr. TALCOTT. You do not investigate until you have a complaint, do you?

Mr. PLUMMER. Yes. We routinely inspect broadcast stations. As we say, 51 percent the last 3 years.

Mr. EVINS. How often do you go in, once every 3 years?

Mr. PLUMMER. Once every 3 years unless there is some special problem where it has been a bad station and we have to go back for reinspection or receive a request from the Broadcast Bureau to inspect something because of complaints. This is 51 percent of the stations inspected in a 3-year period. So in any one year it is a third of that 51, 17 percent inspected in 1 year.

Mr. EVINS. You said you do not look at the good ones. How do you know they are good, if you do not look?

Mr. PLUMMER. Our inspectors know that from experience. If you inspect a station three or four times and find everything is all right, the next time you are going through the town if you have limited time, that is the one you skip.

Mr. EVINS. If you find X station does not have an operator on, you advise him by letter. He puts an operator on and you do not see him again for the next 3 years.

Mr. PLUMMER. That is right.

Mr. EVINS. What else do you find?

Mr. PLUMMER. We find improper logkeeping, improper technical operation, they do not have the transmitter adjusted right. In some cases we find improper radiation in the directional antenna. Occassionally excess power.

BROADCAST LICENSE RENEWAL

Mr. EVINS. Do these radio franchises have to be reviewed every 3 years?

Mr. HYDE. They do on all of these matters.

Mr. EVINS. How many have not been recertificated?

Mr. HYDE. I cannot give you an immediate answer to that but I will be pleased to supply it. There are a significant number of stations that fail of renewal.

I may say where revocation proceedings have been inaugurated and licenses have been canceled; in other instances it becomes a matter of hearing on renewal.

Mr. EVINS. What about occasions where you approved a franchise for an operator, and his competitor does not want him in the field? You say since you previously bought and sold a radio station, you have been trafficking and we are going to cut you off the air. If for sufficient reasons you did not grant him a license in the first place, probably well and good. But if you take it away from him after he is certificated and operating, then are you not taking away property rights?

Mr. HYDE. There have been several instances where this question of trafficking has come up on application for a new permit or increase or improvement in facilities, but I do not know of any instances where we have undertaken to revoke a license.

Mr. EVINS. You take a man's business away from him after he has investments.

Mr. HYDE. I know of no instances where we initiated such an action.

Mr. EVINS. You have some matters in court now, I believe.

Mr. HYDE. There can be different interpretations of how the matter arises, but the question of trafficking will usually come up on an original application.

I might say the competition in the field and resistence of established stations against the development of new ones does not generate a lot of our work. We frequently get a protest against a transfer or a new grant by someone who is in business who does not want a competitor.

Mr. EVINS. Is this not a reversal of the Commission's previous decision?

Mr. HYDE. Yes.

Mr. EVINS. You give him a license to operate. A competitor began to feel the competition and you looked back in the record and found he previously had an interest and his partner forced him out or he sold it. Then you reverse your position and say we will take it way from him.

Mr. HYDE. I do not believe we reverse our position in that sense.

Mr. EVINS. You granted it to him first and then you took him off the air. Is that not a reversal?

Mr. HYDE. I do not know if you have a particular case in mind.

Mr. COX. I think the court required us to do that in one case where we had considered a charge of trafficking, and the majority had decided they would make the grant in any event. But this was a new station.

Mr. HYDE. This would be an appeal.

Mr. COX. The existing station appealed our grant to the man they charged with trafficking, and the court of appeals indicated——

Mr. EVINS. What constitutes trafficking? When a man is in business he is allowed to sell out if he gets a fair profit, is he not?

Mr. HYDE. That is a nice question. How to make a determination as to whether it is an investment or a speculation—trafficking—it is difficult. We have a rule which is designed to prevent trafficking or speculating in permits. It is our ruling against transfers within 3 years of a grant. Even that has its exceptions where the grantee has become insolvent or near insolvent or reasons of health. It is designed to prevent speculation.

Mr. EVINS. Actually, the Commission, once they certificate them, wants to see them successful?

Mr. HYDE. That is right.

COURT REVIEW OF COMMISSION ACTIONS

Mr. EVINS. And as these issues arise, then they have access to the courts?

Mr. HYDE. That is correct. And the law as construed by the courts does give a competitor a certain standing to oppose an application in our agency and to appeal to the courts. If he can show that his financial interests are going to be hurt, he has standing to oppose a new grant and to appeal in case we should make a grant.

Mr. EVINS. How many cases have you certificated a radio operator and within a short period of time taken him off the air?

Mr. HYDE. I think it would be a very, very low number, if any. I cannot recall a single case now.

Mr. JONAS. May I ask the General Counsel a question?

Are these cases de novo in the court or is the court bound by the finding of fact?

Mr. HYDE. Could I answer that? Mr. Geller is out. The review of the Commission decision, in general, is limited to questions of law.

Mr. JONAS. You find the facts and the court is bound by the facts if there is evidence to support your findings?

Mr. HYDE. Yes, sir. Of course the court may find legal error in the procedures, failure to give a hearing, failure to recognize standing. But, in general, a review of our decision is on questions of law. The court is not supposed to substitute their judgment on questions of policy. On questions of fact, there may be a question whether there was adequate evidence to support our finding.

Mr. COX. In collection of forfeitures, there is trial de novo; it is not by appeal. If a licensee or permittee does not pay voluntarily, we have to persuade the Department of Justice to institute proceedings in the district court, and that is tried de novo.

Mr. JONAS. You have to go to court to put him off the air?

Mr. Cox. No; this is to collect forfeitures where we have imposed a fine, perhaps for a violation Mr. Plummer's inspectors discovered.

Mr. HYDE. This is for repeated violation of rules.

Mr. Cox. Yes.

Mr. EVINS. We will not belabor the matter, but in one case, it has been called to my attention, they were on the air, had a large investment, were operating, and the Commission issued an order to stop broadcasting as of a certain date.

Mr. HYDE. I do not have the particular case in mind, but it could develop this way: that we would make a grant, thought it was sound and proper to do it, and on appeal we could be required to reverse our action. I think the circumstance that has come to your attention must be one of that kind. I know of no case where the Commission on its own initiative——

Mr. EVINS. There have not been many cases in which the Commission has ordered them to stop broadcasting after they have been in business with a large investment.

Mr. HYDE. No, sir.

Mr. EVINS. This is rather severe.

Mr. HYDE. This is capital punishment.

OTHER INCREASES BY ACTIVITY

Mr. EVINS. Research and planning. You are asking for a total increase in this activity of $41,857.

Citizens radio activity. We discussed this this morning. You want 2.9 more man-years, or an increase of $59,526. You indicate that you are setting up a staff devoted to citizens' service enforcement activities. Is this what Mr. Plummer was just now discussing?

Mr. HYDE. Not specifically.

Mr. EVINS. He was talking about the field engineering a while ago. Is this not citizens' service?

Mr. HYDE. It is, sir. He did mention broadcasting, but he does have to make these investigations of violations in the citizens' band as well.

COMMUNITY ANTENNA ACTIVITY

Mr. EVINS. CATV: You want a $110,156 increase for this. There are, you say, 1,800 systems and 1,800 additional local franchises which are authorized but not yet in operation. How much work does this place on the Commission?

Mr. HYDE. It puts a very substantial burden on it. It is a phenomena of the new technology, new service concept.

Mr. EVINS. You cannot do much until the courts hand down their decision in these cases. You have two, I believe, in the Supreme Court.

Mr. HYDE. That is correct, Mr. Chairman. We do believe that resolution of these legal questions——

Mr. EVINS. What are these?

Mr. HYDE. Copyright infractions.

CATV JURISDICTIONAL QUESTION

Mr. EVINS. And whether or not the Commission has jurisdiction. Is there a division in the Commission? Some feel you do, and others question it.

Mr. HYDE. That is right. The cases in court involve the question of copyrights and the Commission's jurisdiction.

Mr. EVINS. When do you expect these two cases to be resolved?

Mr. SLOSBERG. Arguments are next month. When the Court will render its decision is unknown. It will be in June, normally.

Mr. EVINS. If they resolve the jurisdictional question for the Commission, you would be in position to proceed much faster in settling matters now in limbo.

Mr. HYDE. I believe when they settle the jurisdictional question we will be absolved of the task we have undertaken or will have a firm legal position on which we can regulate more effectively.

Mr. EVINS. A major broadcast network sends out a telecast and CATV picks it up and sends it to a remote area. What is the jurisdictional question? It is all in interstate commerce, is it not, unless you pick it up in Alaska and discharge it in Alaska.

Mr. HYDE. Yes, and we have asserted jurisdiction based upon our general powers to regulate communications in interstate commerce.

Mr. LOEVINGER. The case in the court involves an antenna system that picks up a station broadcasting in the same State, transmits the signal by wire to homes within that State. It neither uses over-the-air transmission nor receives out-of-State signals. There are some of us who believe in this circumstance the Commission does not have jurisdiction.

Mr. COX. All of those signals, of course, before they were broadcast from Los Angeles were transmitted interstate from New York.

Mr. HYDE. You can see this is a very complicated field in which there can reasonably be a substantial difference of opinion.

Mr. EVINS. If the matter originated in Alaska and completed in Alaska, that would be intrastate, but if part of it originated outside of the State, regardless of the different method or techniques of transmission——

Mr. HYDE. I will put it this way. I do not think any two of them are alike.

REGULATION OF RATES OF CATV SYSTEMS

Mr. EVINS. Who then regulates the rates and the profits for the developing CATV industry?

Mr. HYDE. To the extent there is any regulation attempted, it is in the State. We have not attempted any.

Mr. WYMAN. Is there any regulation attempted within the States?

Mr. COX. Connecticut and Nevada. Of course a great many cities and counties, in granting franchises, have specified a rate and have indicated that if the rates are to be increased the franchise holder would have to come back and at least notify them. But they do not regulate in the sense of trying to relate revenues to investment in the conventional public utility sense.

Mr. WYMAN. Has the State pattern been in the form of the traditional public utility regulation?

Mr. COX. In both States it has been done by the public utility commission and they are, I assume, proceeding in the customary way.

CATV COPYRIGHT QUESTION

Mr. EVINS. On the matter of infringement, does the Commission envision this would be a case for the courts every time as to the degree and extent of infringement?

Mr. HYDE. We believe not. We believe there ought to be some amendments to the copyright law to take cognizance of this new development. We have cooperated with the Registrar of Patents in devising possible ways. Legislation is pending that has that purpose of finding an appropriate way to handle it under copyright law. In the meantime, there was a decision in the *Fortnightly* case which held community antennas were subject to copyright liability. This is now on appeal to the Supreme Court of the United States.

Mr. EVINS. This is a big new field and much of it is undecided until the court decision.

Mr. HYDE. Yes.

INCREASES FOR SUPPORT ACTIVITIES

Mr. EVINS. Support activities. You are asking for an increase of $453,400; $24,000 for pay increases, $55,500 for within-grade promotions, emergency communication activities from other agencies, $296,000, and then you have employment increases, $77,700, for a total of $453,000.

Again, these executive orders were issued years ago. This is not a new duty.

Mr. SOLAN. We have not been funding it though.

Mr. HYDE. This is the matter we discussed this morning.

NEED FOR PLANNING STAFF

Mr. EVINS. What is the Budget Bureau function with respect to these four or five new jobs you are asking on page 12?

Mr. HYDE. This is for planning. This is really one of the significant improvements we hope to make. This is looking toward more effective planning at leadership level.

Mr. EVINS. This is a job for assisting you in your planning of your special studies.

Mr. HYDE. Right, sir.

OTHER OBLIGATION INCREASES

Mr. EVINS. Rents are up $97,000. Mail costs, $11,000. Printing is up $7,200, and other services, $407,000. Is this your new studies?

Mr. HYDE. Yes.

CONTRACT STUDIES

Mr. EVINS. In the first year $610,000 was provided, but this has not been released by the Budget Bureau.

Mr. HYDE. That is right. But I want to state again that we have been studying how best to use these funds, anticipating that they will be released.

Mr. EVINS. Is it your feeling that if the Budget Bureau releases the funds, you will be ready to let the contracts, and before the year is out you could spend the other $400,000?

Mr. HYDE. We would expect to let contracts under this allowance of $600,000, which, by the way, only became available late last year. I mean under the appropriation, it is still not available from the Budget Bureau.

Mr. EVINS. Can you spend more than a half million in a year?

Mr. HYDE. I do believe that if we are going to do a job of the scope we need, we had better have an allowance in these dimensions.

LAND AND STRUCTURE ESTIMATES

Mr. EVINS. Can the purchase of the land and structures and the new equipment wait another year in view of the budgetary crisis and Vietnam?

Mr. HYDE. I would hope you would not ask us to defer it another year. Actually, we have had to curtail our expenditures for equipment this year.

CHARTS ON ACTIVITY COSTS

Mr. EVINS. We will take a look at the tables on pages 15, 16, and 17. We will place these three in the record.

(The pages follow:)

ACTIVITY TABLE

	1967 actual			1968 estimate			1969 estimate		
	Positions	Average employment	Amount	Positions	Average employment	Amount	Positions	Average employment	Amount
I. COMMISSIONERS:									
A. Total personnel compensation	49	43.5	$624,480	47	45.0	$654,265	47	45.0	$690,144
B. Total Personnel benefits			45,900			47,508			49,378
C. Total other obligations			57,157			42,650			55,650
Total obligations			727,537			744,423			795,172
II. Broadcast:									
1. Rules and standards	22	21.0	232,512	22	20.3	232,556	23	21.3	256,224
2. Research and education	13	11.9	131,757	13	11.8	136,306	13	12.8	151,179
3. Complaints and compliance	48	42.6	471,667	49	43.1	493,753	49	43.1	509,053
4. Application processing	146	139.9	1,549,253	149	137.1	1,575,392	149	141.3	1,668,938
5. Hearings	103	96.6	1,069,555	99	85.7	993,377	99	89.0	1,061,245
6. Network study	7	5.8	64,217	7	5.8	66,444	7	5.8	68,502
7. International	6	5.8	64,217	6	5.8	66,444	6	5.8	68,502
A. Total personnel compensation	345	323.6	3,583,178	345	309.6	3,564,272	346	319.1	3,783,643
B. Total personnel benefits			263,544			372,050			277,931
C. Total other obligations			298,149			320,295			284,295
Total obligations			4,144,871			4,157,617			4,345,869
III. Common carrier:									
1. Domestic rate regulation	82	74.4	880,024	83	75.2	899,602	83	79.2	976,058
2. Domestic service regulation	11	10.8	127,824	12	10.7	128,496	12	11.7	143,903
3. Domestic radio regulation	35	31.8	376,240	39	32.8	394,908	39	34.8	430,671
4. Accounting regulation	19	16.4	192,997	18	15.7	189,230	18	17.7	216,969
5. International and satellite commission	43	32.3	381,565	48	32.7	392,601	48	35.0	431,550
A. Total personnel compensation	190	165.7	1,958,650	200	167.1	2,004,837	200	178.4	2,199,157
B. Total personnel benefits			143,622			155,384			156,531
C. Total other obligations			120,478			78,475			85,475
Total obligations			2,222,750			2,238,696			2,441,157

ACTIVITY TABLE—Continued

	1967 actual			1968 estimate			1969 estimate		
	Positions	Average employment	Amount	Positions	Average employment	Amount	Positions	Average employment	Amount
IV. Safety and special radio services:									
1. Regulatory	41	36.6	$474,900	44	37.6	$522,885	46	42.6	$595,850
2. Authorization of service	117	110.2	838,561	117	109.2	872,219	117	109.2	904,532
3. Hearings and enforcement	5	5.9	53,507	7	7.3	64,922	7	7.3	67,718
A. Total personnel compensation	163	152.7	1,366,968	168	154.1	1,460,026	170	159.1	1,568,100
B. Total personnel benefits			101,229			110,917			112,500
C. Total other obligations			174,196			188,805			156,355
Total obligations			1,642,393			1,759,748			1,836,955
V. Field engineering:									
1. Monitoring	154	146.8	1,420,583	155	145.8	1,493,406	155	145.8	1,550,758
2. Inspections	95	91.5	885,445	99	91.1	932,955	99	95.1	1,010,623
3 Investigations	81	76.6	741,258	80	73.3	750,665	80	76.6	813,636
4 Application processing	55	50.2	485,860	54	50.2	514,098	54	50.2	534,882
A. Total personnel compensation	385	365.1	3,533,146	388	360.4	3,691,124	388	367.7	3,909,899
B. Total personnel benefits			256,035			269,524			282,347
C. Total other obligations			719,029			718,398			757,820
Total obligations			4,508,210			4,679,046			4,950,066
VI. Research and planning in communications technology:									
1. Spectrum planning and research	18	17.0	186,065	17	15.5	180,575	17	15.5	186,349
2. Frequency management	52	50.8	556,000	51	48.5	565,553	51	48.9	587,581
3. Communications technology	42	40.1	438,919	41	38.4	447,387	41	38.4	461,442
A. Total personnel compensation	112	107.9	1,180,984	109	102.4	1,193,515	109	102.8	1,235,372
B. Total personnel benefits			86,240			87,690			89,500
C. Total other obligations			107,575			438,578			1,125,578
Total obligations			1,374,799			1,719,783			2,450,450

VII. Citizens radio service:									
1. Regulatory	5	4.3	59,600	5	4.2	61,636	5	4.6	68,829
2. Authorization of service	24	23.0	158,286	25	24.6	177,171	25	24.6	184,687
3. Hearing and enforcement	48	45.7	357,897	61	55.3	452,829	61	57.8	497,646
A. Total personnel compensation	77	73.0	575,783	91	84.1	691,636	91	87.0	751,162
B. Total personnel benefits			46,256			50,131			51,255
C. Total other obligations			65,584			225,557			87,485
Total obligations			687,623			967,324			889,902
VIII. Community antenna TV:									
1. Processing applications and petitions	19	13.0	154,037	23	22.0	260,524	27	24.5	283,387
2. Rulemaking and research	2	1.0	11,849	4	2.8	33,147	4	2.8	36,846
3. Hearings	7	7.1	84,146	17	16.4	185,169	26	22.4	268,763
A. Total personnel compensation	28	21.1	250,032	44	41.2	478,840	57	49.7	588,996
B. Total personnel benefits			18,433			29,801			38,868
C. Total other obligations			12,385			69,364			24,364
Total obligations			280,850			578,005			652,228
IX. Support activities:									
1. Office of Executive Director	141	133.1	1,050,751	146	133.0	1,129,928	173	158.5	1,531,302
2. Legal services	51	45.1	538,297	50	44.7	554,324	50	46.8	597,053
3. Office of the Secretary	22	21.7	176,841	21	21.0	180,017	21	21.0	186,880
4. Office of Information	6	5.9	62,560	7	6.8	64,464	7	6.8	66,898
A. Total personnel compensation	220	205.8	1,828,449	224	205.5	1,928,733	251	233.1	2,382,133
B. Total personnel benefits			134,683			139,647			164,890
C. Total other obligations			299,696			260,978			362,178
Total obligations			2,262,828			2,329,358			2,909,201
A. Total personnel compensation	1,569	1,458.4	14,901,670	1,616	1,469.4	15,667,248	1,659	1,542.9	17,108,600
B. Total personnel benefits			1,095,942			1,163,652			1,223,200
C. Total other obligations			1,854,249			2,343,100			2,939,200
Total obligations			17,851,861			19,174,000			21,271,000

COMMON CARRIER INCREASE

Mr. EVINS. Common carrier, your average employment is up 11. You are completing your investigation of A.T. & T. What are you going to use these new people for in your common carrier activity?

Mr. STRASSBURG. I believe there is just an increase in the average employment. As far as positions are concerned, I do not feel it is an increase.

Mr. HYDE. That is right. But the need for increase in average employment relates not to the telephone investigation, Mr. Chairman, but to other activities, such as the nominal increase to keep up with the growing application file that we are getting in domestic, public, mobile, and land services.

Mr. EVINS. What do you mean, keep up with the applications?

Mr. HYDE. There is a constant, growing increase in number and difficulty of handling applications filed by common carriers for radio facilities, both point to point and mobile. As I say, they are increasing in number, in volume, and the interference problem is becoming more complex, which takes obviously more time to process and resolve.

STAFF ADDED FOR A.T. & T. INVESTIGATION

Mr. JONAS. I thought you added some people for the telephone investigation.

Mr. HYDE. Yes; a year ago we did add some people.

Mr. JONAS. How many?

Mr. HYDE. I do not recall. Actually, in the investigation, sir, we did not do much outside recruiting. We have been using existing staff. For the most part, we have been using about 20 people full time, or almost full time, of the existing staff.

As the other activities continue to grow, however, to that extent there has been very normal staff increases in the past year or two, but nothing of great significance attributable to the telephone investigation.

Mr. JONAS. Assuming that the workload in every other activity remained constant, you could eliminate some people since that investigation is practically over?

Mr. HYDE. I would say no, sir, because the telephone investigation consumes, in effect, a great number of our day-to-day activities. We always have personnel required for giving attention to the regular ratemaking problems that arise on a day-to-day basis by new filings by carriers, all of which have to be treated by personnel.

Mr. JONAS. I understand that is required to be handled by your regular personnel. Where are these special investigators that made the investigation upon which your hearing was based, and since the hearing has been concluded, the first phase of it?

Why do you not have a surplus of people?

Mr. HYDE. The point is we did not have a great increase for the purposes of the investigation.

Mr. JONAS. Fifteen?

Mr. HYDE. I do not think so.

Mr. STRASSBURG. We have 35 people assigned to the investigation, but they were not hired——

Mr. JONAS. Who did what they would have been doing if they had not been on this special case?

Mr. STRASSBURG. They were dealing with activities which are, as I said before, now encompassed by the investigation, such as, we have people who deal constantly with the problem of allocation which is very much cost allocation work, and jurisdictional separation issues which are very much involved in the telephone investigation. Instead of doing these things in the normal course of their activities which consist of joint studies with the State commissiones, which goes on on a regular basis, this is being done in the framework of the investigation now and has been done in the framework of the investigation.

Now that we are finishing that phase of the proceeding, many of these people are shifting over to the current issues in the investigation, the second phase of the investigation dealing with rate structure principles and the classification and allocation of costs among individual classes of service. So that I do not think, even should the investigation cease, it is going to mean we have 15 people who are surplus. Absolutely not.

EFFECT OF INVESTIGATION ON OTHER COMPANIES

Mr. JONAS. At any rate the decision finally in that case regarding rates will apply throughout the industry?

Mr. HYDE. Throughout the industry.

Mr. COX. Just the Bell.

Mr. HYDE. Any business with interstate telephone business. This is an investigation of Bell, but when we fix rates for their charges——

Mr. JONAS. General Telephone, for example.

Mr. STRASSBURG. General Telephone does concur in many of the interstate rate schedules of the Bell System. To that extent those rates we fix for Bell affect the charges collected by General Telephone in its territory.

Mr. JONAS. It will not require a separate investigation for every operator?

USE OF A.T. & T. INVESTIGATIVE STAFF

Mr. HYDE. We do not anticipate a new and separate investigation.

I would like to give a further reply about the question as to what happens to people that are engaged in the comprehensive investigation after that is completed.

When we undertook the normal proceeding to investigate A.T. & T., we did not start a new activity, we had actually carried on a continuing investigation of them from month to month, and annually we would usually have an informal conference.

In the case of the investigation we undertook a formal proceeding and the same people that had theretofore worked in the conference procedure were engaged in the formal hearing.

Mr. LOEVINGER. This may be irrelevant and may be irreverent, but it stimulates an observation that long bothers me.

Congress issues a very broad and quite ungeneralized mandate to regulate telephone rates, to regulate broadcasting in certain respects, sets up a commission. Then the Commission gets a lot of pressure from some group. Some committees in Congress, as this Commission is now getting from the Commerce Committee because it is, according to some of the members, not regulating enough, not being tough enough in looking at all of the details of the transactions that go on. On the

other hand, you come to the Appropriations Committee and they say, "Well, what do you need all of these people for, why are you engaged in all of these activities?" There are, I hope the members realize, inconsistent pressures emanating from Congress itself.

Mr. EVINS. We recognize that, Mr. Commissioner. We think you have excellent judgment and you are always looking at the public interest. You should keep the public interest in mind and decide whether or not you should proceed against this giant industry. The Commission should not be too concerned about a little pressure; they should be concerned with their statutory authority and the public interest.

Mr. LOEVINGER. We are concerned with something else.

The real decisions I think are being made here because when you decide how many people there shall be and what level you effectively determine activities.

Mr. EVINS. Does there always have to be a higher budget to be able to discharge your public interest responsibility?

Mr. LOEVINGER. No, sir; I do not say it does.

COMMUNITY ANTENNA TV

Mr. EVINS. Community Antenna Television, item 8. You go up 13 jobs since last year and you go up 29 jobs since 1967. Still these cases are pending in the courts and you really cannot proceed. You want 57 jobs in 1969 and you are still waiting for the court decision.

Mr. HYDE. We are doing the best we can in the meantime.

COMPENSATION COSTS BY ORGANIZATIONAL UNIT

Mr. EVINS. We will place the tables in the record and place the Commission's report in the record.

(The pages follow:)

ORGANIZATION TABLE

Personnel compensation	1967 actual			1968 estimate			1969 estimate		
	Positions	Average employment	Amount	Positions	Average employment	Amount	Positions	Average employment	Amount
Office of Commissioners	49	43.5	$624,480	47	45.0	$654,265	47	46.0	$680,144
Broadcast Bureau:									
Office of Chief	12	10.6	141,365	12	10.6	145,456	12	10.6	149,331
Broadcast Facilities Division	74	72.6	771,605	74	70.4	786,817	74	72.6	835,449
Rules and Standards Division	19	18.1	261,240	19	18.1	271,743	20	19.1	294,814
Renewal and Transfer Division	46	42.1	409,555	46	40.1	407,352	46	42.1	442,908
Hearing Division	29	27.9	378,643	30	28.4	398,301	34	30.9	434,860
Research and Education Division	13	12.0	125,408	13	11.0	123,117	13	12.0	137,610
License Division	36	32.2	199,012	39	33.9	219,657	39	33.9	231,962
Complaints and Compliance Division	31	28.1	288,705	32	28.6	304,867	32	28.6	315,248
Office of Network Study	7	5.7	76,773	7	5.7	79,914	7	5.7	81,982
Total, Broadcast Bureau	267	249.3	2,652,306	272	246.8	2,737,224	277	255.5	2,924,164
CATV task force	20	13.4	156,592	26	24.0	277,790	30	26.5	317,172
Safety and Special Radio Services:									
Office of Chief	9	8.2	107,340	9	8.2	103,766	9	8.7	112,057
Legal, advisory and enforcement	19	16.8	145,772	20	17.5	148,924	20	19.3	174,246
Industrial and public safety rules	16	13.0	168,792	18	13.2	166,061	20	18.0	226,040
Industrial and public safety facilities	58	55.5	429,267	56	53.5	447,203	56	53.5	467,244
Aviation and Marine Division	30	27.7	294,982	29	26.7	325,331	29	26.7	335,350
Amateur and Citizens Division	41	40.6	307,805	45	43.0	334,223	45	43.8	358,682
Total, Safety and Special	173	161.8	1,453,958	177	162.1	1,525,508	179	170.0	1,673,619
Field Engineering Bureau:									
Office of Chief	16	15.3	163,649	18	16.3	162,840	18	16.3	168,933
Field Offices Division	211	202.5	1,884,306	217	200.1	1,994,595	217	207.4	2,146,382
Monitoring Systems Division	170	162.5	1,558,618	177	166.5	1,659,670	177	165.5	1,723,108
Engineering and Facilities Division	23	19.0	179,301	23	21.7	216,305	23	21.7	224,573
Total, Field Engineering	420	399.3	3,785,874	435	404.6	4,033,410	435	411.9	4,262,996
Common Carrier Bureau:									
Office of Chief	13	12.9	155,792	13	12.9	165,553	13	12.9	171,839
Economy Study Division	12	8.8	113,987	13	9.4	122,544	13	9.4	127,096
Field Operations Division	29	25.8	308,204	25	20.7	256,212	25	22.7	287,279
International Satellite Communications Division	40	30.9	389,668	46	35.6	433,181	46	41.1	508,284
Domestic Rates Division	47	41.2	508,437	47	41.2	538,056	47	42.4	570,628
Domestic Service and Facilities Division	10	8.4	111,401	11	8.5	111,867	11	9.1	122,296
Domestic Radio Division	33	31.2	285,990	39	32.4	302,577	39	34.4	339,308
Total, Common Carrier Bureau	184	159.2	1,873,479	194	160.7	1,929,990	194	172.0	2,126,730

ORGANIZATION TABLE—Continued

Personnel compensation	1967 actual			1968 estimate			1969 estimate		
	Positions	Average employment	Amount	Positions	Average employment	Amount	Positions	Average employment	Amount
Office of Chief Engineer:									
Immediate Office	7	6.3	$93,916	8	7.3	$92,719	8	7.3	$95,629
Technical Division	22	21.6	243,387	21	20.4	249,557	21	20.4	257,656
Research Division	19	18.6	227,354	18	16.7	233,103	18	16.7	239,718
Frequency Allocation and Treaty Division	34	33.3	313,679	34	32.4	330,136	34	32.8	347,179
Laboratory	19	17.1	219,092	19	16.7	220,491	19	16.7	227,106
Total, Office of Chief Engineer	101	96.9	1,097,428	100	93.5	1,126,006	100	93.9	1,167,288
Office of General Counsel:									
Immediate Office	7	6.5	97,847	7	6.9	103,736	7	6.9	107,189
Litigation Division	11	10.7	117,296	11	10.9	129,418	11	10.9	134,823
Legislation Division	8	6.9	93,125	7	5.9	92,897	7	5.9	95,822
Admiralty Law and Treaties Division	11	9.3	105,289	11	10.2	117,300	11	10.8	128,698
Enforcement and Defense Division	13	11.2	120,942	13	10.2	109,017	13	11.7	129,920
Total, Office of General Counsel	50	44.6	534,499	49	44.1	552,367	49	46.2	596,452
Office of Hearing Examiners	24	28.1	442,999	25	24.5	418,113	24	24.0	424,580
Review Board	29	25.9	347,085	30	24.7	337,830	30	28.5	392,334
Office of Opinions and Review	17	16.4	207,794	20	18.0	249,410	25	21.5	295,829
Office of Information	6	5.9	62,560	7	6.8	64,464	7	6.8	66,694
Office of Executive Director:									
Immediate office	8	6.9	100,345	8	7.2	107,945	13	11.2	161,987
Budget and Fiscal Division	27	27.1	197,845	29	27.8	212,472	29	27.8	221,350
Management Information Division	8	5.5	53,399	7	6.2	74,211	7	6.2	76,191
Personnel Division	19	17.9	196,563	19	17.9	206,344	19	17.9	212,061
Data Processing Division	54	50.7	385,135	55	51.0	412,323	55	51.0	428,613
Office Services Division	71	68.4	430,968	73	65.0	428,560	66	64.8	447,205
Emergency Communications Division	3	2.5	31,690	3	2.5	36,966	25	24.0	333,030
Total, Office of Executive Director	190	179.0	1,400,945	194	177.6	1,478,821	214	202.9	1,880,437
Office of the Secretary:									
Immediate office	4	4.5	44,138	3	3.3	36,694	3	3.3	37,390
Dockets Division	17	13.4	84,830	19	16.0	104,083	19	16.0	107,630
Minute and Rules Division	12	11.2	80,431	12	11.7	86,800	12	11.7	89,360
Library Division	6	6.0	52,272	6	6.0	54,473	6	6.0	55,781
Total, Office of the Secretary	39	35.1	261,671	40	37.0	282,050	40	37.0	290,161
Grand total	1,569	1,458.4	14,901,670	1,616	1,469.4	15,667,248	1,659	1,542.9	17,108,600

BROADCAST ACTIVITIES

Mr. EVINS. We will look at the big division, broadcast activity. This includes AM and FM broadcasting, visual service (television), and several related auxiliary services. You need one more person, from 22 to 23, to draw up some more rules and standards.

You say in 1945 there were six television stations and less than a thousand radio stations. Today there are 750 television stations with over 6,000 radio stations on the air. Ninety-four percent of all homes have television; almost one out of every five has color television. People have television when they do not have a——

Mr. HYDE. Bathtub.

Mr. EVINS. Or do not have telephones. But the fact that there is this increased dimension is impressive.

Mr. HYDE. It is.

Mr. EVINS. Over the years broadcasting (particularly television) has accounted for an ever-increasing proportion of advertising expenditures. In 1957 radio and television accounted for less than $2 billion out of a total of $10 billion in total volume of advertising. In 1967 radio and television will account for almost $4 billion in advertising expenditure out of a total of about $17.5 billion.

In 1967 individuals will have spent over $5 billion for radio and television sets. In 1957 the amount spent by the public for these items was less than $2 billion.

We had a little testimony here the other day that they had a 100-percent mark-up on some of the sales.

These increases in advertising expenditures and consumer expenditures in broadcasting are substantially greater than the advances in the economy as a whole during the same period. During the last 10 years while the gross national product increased about 75 percent, advertising and consumer expenditures in broadcasting increased about 100 percent.

You say there are 140 educational televisions in 2,000 schools throughout the country. What is your instructional television fixed service, ITFS?

INSTRUCTIONAL TV FIXED SERVICE

Mr. HYDE. Commissioner Lee will give you a very nice exposition of that.

Mr. EVINS. Mr. Lee.

Mr. LEE. This is a few bands of frequences that the Commission made available for educational television. It is a point to point service and designed only for in-school training.

Mr. EVINS. Intrastate?

Mr. LEE. No; not necessarily. It's short range. It permits the school to use up to four channels at one time. We think it will replace the traditional educational station for in-school training and the so-called off-the-air educational station will be devoted to the type of thing they are talking about in the public——

Mr. GIAIMO. Is it between schools in the cities?

Mr. LEE. At a central point.

For example, in New York at the Empire State Building they are sending out these programs to 600 or 700 individual school buildings at the same time on four channels.

Mr. EVINS. The Commission allows all of the schools of Connecticut to receive it?

Mr. LEE. Yes, sir; they can receive it pretty well in Connecticut.

Mr. TALCOTT. Who runs this station?

Mr. LEE. This must be a duly incorporated educational body, a school system.

Mr. TALCOTT. So a high school system in New York City could devise the program and then Connecticut, for example, would be stuck with the New York high school program?

Mr. LEE. Not necessarily. It is not designed for Connecticut. You can receive it in certain sections.

I am sure in Connecticut there are applications either granted—I doubt if anything is on the air, but Hartford has shown some activity.

GROWTH OF BROADCAST STATIONS

Mr. EVINS. We will place this chart in the record on page 24. It shows you that the number of broadcast stations goes up from 4,000 to over 10,000. And the chart on the next page, 25, shows you that the personnel increase for the Commission is about 43 percent and the increase in the authorized stations is 108 percent. You have been going up pretty well with them until 1967.

(The pages follow:)

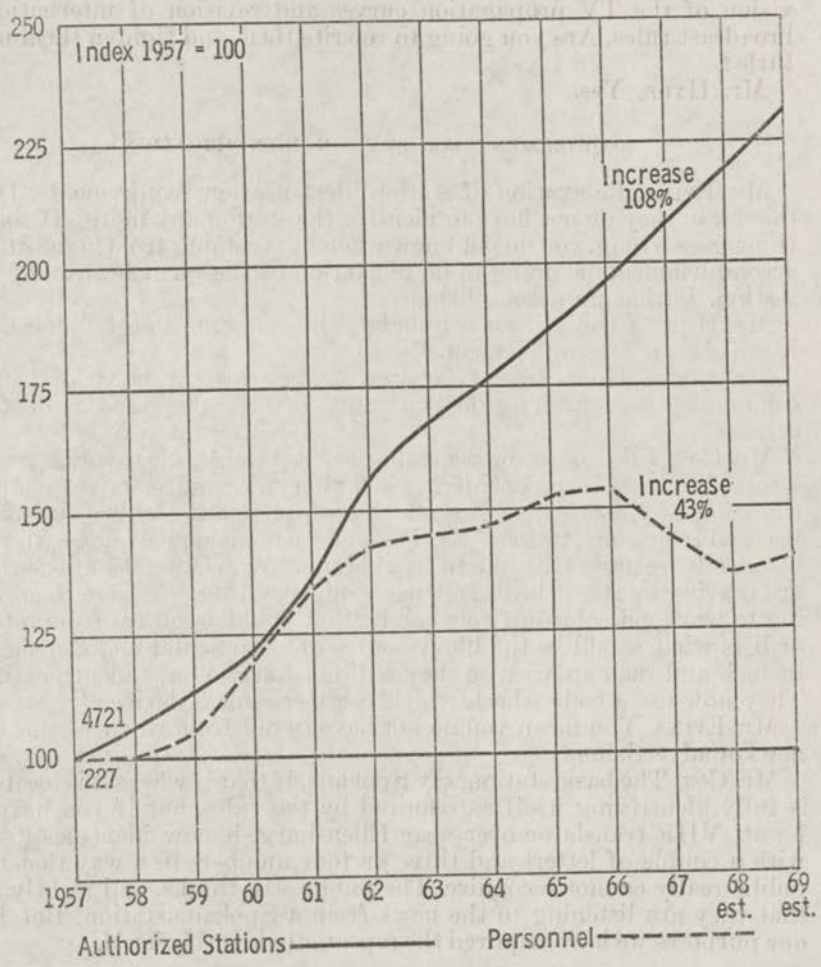
NUMBER OF AUTHORIZED BROADCAST STATIONS

	1960	1961	1962	1963	1964	1965	1966	1967	Estimate, 1968	Estimate, 1969
AM	3,581	3,757	3,886	3,997	4,061	4,097	4,153	4,224	4,257	4,307
Commercial FM	912	1,092	1,191	1,207	1,371	1,565	1,744	1,951	2,151	2,350
Educational FM	181	199	209	238	257	272	302	344	384	424
Commercial TV	653	650	654	666	668	689	735	787	845	895
Educational TV	64	67	79	91	107	125	144	183	225	270
Translators	302	704	1,483	1,716	1,913	2,023	2,187	2,352	2,500	2,648
Total	5,693	6,469	7,502	7,915	8,377	8,771	9,265	9,841	10,362	10,894

The following table shows the growth in the number of authorized stations compared with the increases in personnel engaged in broadcast activities since 1957:

Fiscal year	Number of authorized broadcast stations	Broadcast activity personnel
1957	4,721	227
1958	5,018	228
1959	5,405	239
1960	5,693	272
1961	6,469	306
1962	7,502	324
1963	7,915	330
1964	8,377	334
1965	8,771	347
1966	9,265	344
1967	9,841	324
1968 (estimate)	10,362	320
1969 (estimate)	10,894	319

The chart shown below depicts graphically the increase in authorized stations compared with personnel engaged in broadcast activities.



NOTE: The absolute figures on which the above chart is based are shown on page 24.

Mr. HYDE. We did mention processing these applications has become more complex and difficult. Please bear that in mind, too.

Mr. EVINS. In 1961, you had almost as many personnel as you had increase in radio stations.

Mr. HYDE. There certainly has been some recognition of the increasing workload.

SCHEDULED BROADCAST RULES WORK

Mr. EVINS. They are better trained and more knowledgeable. They should be able to process them faster.

Significant accomplishments in 1968 and 1967. You point these out. The last one says, accomplishments anticipated in 1968 include revision of the TV propagation curves and revision of international broadcast rules. Are you going to rewrite them and tighten them up a little?

Mr. HYDE. Yes.

REQUIREMENT FOR STATION IDENTIFICATION

Mr. EVINS. Relaxation of station identification requirements. Does this mean they do not have to identify the station any more? If something goes wrong, you do not know where it is coming from? One of the accomplishments is going to be relaxation of the identification of the station. Is that an accomplishment?

Mr. HYDE. I think if we can make it less onerous and still effective, it will be an accomplishment.

Mr. EVINS. How can it be onerous? They point with pride to the community station. Why do you want to relax the rule on identification?

Mr. COX. I do not know what that refers to unless it involves translators. We have been considering relaxing the requirements for identification of these translators which simply repeat the broadcasts of licensed television stations. Mr. Plummer has some problems with this because his people still like to be able to know what station it is they are hearing in case it is off frequency or something. We have been trying to work out some device whereby they could ascertain from tables or lists what would be the likely source of a particular channel signal in such and such an area, so they will not have to have identification. They now use a code wheel, which is a mechanical device.

Mr. EVINS. You mean you do not have to tell from whence came the news or advertising?

Mr. COX. The basic station, say Spokane, if that is where it is located, is fully identifying itself as required by the rules, but if you have a 1-watt VHF translator over near Ellensburg, it now identifies itself with a couple of letters and three or four numbers in a way that the public really cannot recognize. The public still thinks, and rightly so, that they are listening to the news from a Spokane station. But for our purposes we have required the repeater to identify itself.

REVISION OF MULTIPLE OWNERSHIP RULE

Mr. EVINS. Revision of multiple ownership 1-percent rule. What is that?

Mr. HYDE. The problem here is generated by the fact that stocks of many broadcast entities are held by investment trusts, by investment groups, and if you applied the multiple ownership strictly you would have an ownership of too many broadcast interests in one group. What we are striving to establish here is a rule which will prevent concentrations of ownership but at the same time not make a big issue.

NEWSPAPER OWNERSHIP

Mr. EVINS. You do not want a newspaper to own radio stations or a radio station to own newspapers?

Mr. HYDE. Not without our knowing about it.

Mr. EVINS. How far can a small-town newspaper go in acquiring and controlling radio stations and therefore having a monopoly on all of the news?

Mr. HYDE. The policy has generally worked this way: If there is a contest for an assignment, if there are alternate choices available to the Commission, they would in principle try to make a decision that would lead to diversity in the ownership of mass media communications. But there are quite a few instances when, although the frequency has been available for years, 20 years, let's say, and no one else applies and the local weekly newspaper proposes to put an FM station on the air, the majority of the Commissioners, judged by some actions, would probably say it is better to have a station, even though the local weekly runs it, than not to have it. Some other Commissioners feel this sets a bad precedent.

Mr. JONAS. You do not have to get down in the little weeklies. You have an example right here in the city of Washington. Two of them, do you not? Do not both newspapers own stations?

Mr. HYDE. The Star operates WMAL and the Post operates WTOP; that is correct.

Mr. JONAS. How did they get those things?

Mr. HYDE. The Post acquired its first radio station by purchase, subject to approval of the Commission.

Mr. JONAS. Was that contested?

Mr. HYDE. No.

Mr. JONAS. Nobody else wanted it or could afford it?

Mr. HYDE. We do not have an opportunity to consider alternate applications in assignment cases. I recall they applied for assignment of license or transfer of control of an AM station. They later went into the TV business and I think in that case they made an initial application.

Mr. EVINS. More news is generated and emanates from around here than any place I know. I think we have a lot of competition.

Mr. JONAS. In the morning newspaper field in Washington?

Mr. HYDE. I get my news off the radio.

Mr. GIAIMO. In the case of these stations you are talking about that are owned by newspapers, they do come up for relicensing every 3 years; do they not?

Mr. HYDE. At least every 3 years. They would be open for challenge.

Mr. GIAIMO. They would be open for challenge?

Mr. HYDE. They would.

Mr. GIAIMO. In fact, I suppose at times it has been challenged.

Mr. HYDE. There have been a few instances where an existing operation has been challenged by a new one.

Mr. EVINS. The question always uppermost in the minds of the Commission should be, does it serve the public interest?

Mr. HYDE. Yes, sir.

Every time we issue a decision, it is in the public interest. It says so in our legal form.

RESEARCH AND EDUCATION DIVISON

Mr. EVINS. Research and education. This activity is concerned with the study of social and economic factors affecting broadcast com-

munications, and the compilation of data on the condition and the status of the broadcast industry. Don't you know the status? It has grown to astronomical proportions.

Mr. HYDE. It is constantly changing and we have to keep conversant with it.

Mr. EVINS. Here is the fairness doctrine shown on page 28. You want to give the Democrats and Republicans fair treatment on the air.

Mr. HYDE. Yes, sir.

Mr. EVINS. We Democrats think we are not on the air enough and the Republicans think we get too much time. During the past several years the Commission has engaged in a growing number of proceedings requiring expert statistical assistance. Everybody is satisfied with this rule, are they not?

Mr. HYDE. No. However, no one can object in principle to the proposition that stations ought to be fair in treatment of issues of public significance.

IMPACT OF ALL-CHANNEL LEGISLATION

Mr. EVINS. Another matter is the probable course of UHF development in the light of all channel legislation. Tell us about this.

Mr. HYDE. We do have the all-channel legislation, as you know. The major objective of that was to provide a wider basis for the television industry. Absent the use of the UHF channels, we would have a system built on 12 channels only. UHF adds 73 channels, offers the prospect of a diversified competitive system, and I can tell you that since the passage of the all-channel law and its implementation by our rules, there has been a rapid increase in the distribution of all-channel sets. Some of this has been generated by the new interest in color. People would be buying new sets to get color and they would also get all-channel reception. This has encouraged a number of applications for permits to builld UHF stations.

Mr. EVINS. You are seeing an increased use of UHF?

Mr. HYDE. We are.

COMPLAINTS AND COMPLIANCE ACTIVITIES

Mr. EVINS. Regarding compliance and complaints, you say that your investigating and enforcing functions are a large part of the Commission's public relations activity in the broadcast field. These complaints must be answered.

What is the nature of these complaints?

Mr. HYDE. Of course, the complaints will come in many, many forms.

Mr. EVINS. This is your answering service.

Mr. HYDE. It is really our answering service. Some of the letters will raise questions of very serious concern. We will ordinarily direct them to the licensee and get his response to it. Others will be less significant.

Mr. EVINS. Do they come from competitors or the public?

Mr. HYDE. Listeners and viewers for the most part. We do get complaints from competitors sometimes about alleged violations of rules and perhaps anticompetitive practices.

Mr. EVINS. What can the Commission do and what has it done regarding quality of programing?

Mr. HYDE. Such a writer would be asked to address his comments to the licensee or the sponsor. If the letter seemed to be a complaint of some real base, we would send it to the licensee and ask him to give it his attention.

I might say just a letter of inquiry is a bit of a sanction which will sometimes get results.

Mr. EVINS. Will the Commission say that the quality of television programs has increased over the past several years?

Mr. HYDE. The answer to that question would vary according to the subjective judgments of whoever the viewer might be. The programs I look at are better ones according to my views.

Mr. EVINS. You pick only ones you like.

Mr. HYDE. That is right.

Mr. JONAS. If you cannot do much about the program, why have you kept up all of this monitoring?

Mr. HYDE. Our monitoring is really technological monitoring to guard against violations of technical rules and also to detect unauthorized operation. We do not monitor programs as such. There may be an exception to that where we have complaints of a broadcast that would violate the law such as the law against lotteries or to investigate fraudulent advertising, but this would be the exception. Section 326 of the act prohibits the Commission from censoring programs.

Mr. EVINS. What has the Commission done, if anything, regarding the quality of programs?

Mr. HYDE. We have adopted new renewal license application forms which set out a procedure which applicants are expected to follow. Specifically, he is expected to study his community and find out what can be done to improve or to satisfy the needs of that community.

And he is expected to present a plan related to that investigation in a way designed to satisfy the needs he has discovered.

This is how the problem is handled in the licensing function. We also attempt to perform our business in a way that will be conducive to a competitive system. In that connection, the Commission unanimously supported the concept of a public television corporation with the thought that this would give the impetus to education stations, would provide another alternative to listeners. We would expect a good educational station would be a spur to the commercial and commercial to educational stations.

Mr. EVINS. Is it the majority view of the Commission that the programing quality of television is better than it was a decade ago?

Mr. HYDE. It is better than it was a decade ago.

Mr. EVINS. Does not the Commission do something regarding compliance other than just referring the letter to the broadcast industry?

Mr. HYDE. On the matter of compliance?

Mr. EVINS. Don't you set up the standards when the licensing is up for renewal?

Mr. HYDE. Renewal licenses are checked against proposals and promises on which he obtained his last previous application.

Mr. WYMAN. You ordered some free time within a year or so for the W. E. DuBois Club on a complaint?

Mr. HYDE. We had a complaint under the fairness doctrine and after some considerable study we issued a notice to the station, I think WHN New York, saying that under the fairness doctrine we believed there should have been an opportunity for a reply by the DuBois Club. I should not undertake to give the Commission's reason from memory like this. I would be glad to supply you a copy of the ruling.

Mr. EVINS. Supply that for the committee.

(Note: The information was supplied to the committee.)

Mr. WYMAN. Was that a unanimous decision?

Mr. HYDE. No, it was not. Commissioner Lee disagreed with the views of the other commissioners.

Mr. WYMAN. But it was 6 to 1?

Mr. HYDE. I believe that is right. The Commissioners can tell me.

(The Commission's Public Notice on this matter follows:)

WHN, NEW YORK, N.Y., ORDERED TO MAKE TIME AVAILABLE TO DUBOIS CLUBS FOR RESPONSE TO EDITORIAL

Storer Broadcasting Co., Inc., licensee of radio station WHN, New York, N.Y., has been notified by the Federal Communications Commission that it must make time available to the DuBois Clubs of America for a reply to an editorial attacking the organization.

William M. Kunstler, attorney for the DuBois Clubs, had complained to the Commission that Storer had refused a request for time to answer announcements describing the DuBois Club as "Marxist," "Red," "founded * * * and controlled by American Communists" and "foremost among the activities currently directed against our young people * * *."

Storer contended that the announcement was "factual in nature * * * was based on official government source material * * *" and "does not discuss a matter * * * reasonably subject to controversy, or one as to which there are significant opposing viewpoints."

The Commission, in a letter to the licensee, stated that the announcement constituted a personal attack and under the fairness doctrine, the DuBois Clubs must be notified and given an opportunity to respond.

The Commission points out that the controversial issue here is whether the DuBois Clubs are established and used by the Communist Party of the United States to "subvert the minds of American youth." Storer contends that its statement is not controversial since it reflects statements made by the Attorney General and the FBI in a petition filed before the Subversive Activities Control Board. The DuBois Clubs are legally contesting the action. The Commission states that "As we have stressed in other similar areas, the truth or falsity of the attack is not a matter for determination by this Commission * * * the licensee cannot aver that the attack is true and therefore there is no need to let the public hear the other side; that rather the other side must be given an opportunity to reach the public, which will thus be in a position to make its judgment on this issue which the licensee chose to present as one of importance to his audience."

Action by the Commission, January 31, 1968; by letter. Commissioners Hyde (chairman), Cox, Loevinger, Wadsworth and Johnson; with Commissioner Bartley concurring in the result and Commissioner Lee disenting and issuing a statement (attached).

Letter by the Commission is attached.

JANUARY 31, 1968.

WARREN C. ZWICKY, ESQ.,
Vice President and Washington Counsel, Storer Broadcasting Co.,
Washington, D.C.

DEAR MR. ZWICKY: This is in reference to your letter of July 31, 1967, commenting on the May 19, 1967, fairness complaint filed by Mr. William M. Kunstler on behalf of the W. E. B. DuBois Clubs of America.

The editorial broadcast by Storer Broadcasting Co. on February 25, 1967, stated, inter alia: "The Communist Party of the United States is waging an intensive campaign to subvert the minds of American youth. Foremost among the activities currently directed against our young people is the new Marxist youth organization known as the DuBois Clubs of America founded at a special meeting in California dominated and controlled by American Communists. The Reds mispronounce their group, boys club instead of the DuBois Clubs to deliberately deceive prospective members * * *."

Mr. Kunstler's letter of October 11, 1967, to the Commission asserts "unequivocally that the entire editorial insomuch as it pertains to the DuBois Clubs is untrue." Mr. Kunstler also asserts that the editorial raised the issue of "whether youth groups in general are Communist dominated and controlled" and that the editorial "casts suspicion on all youth groups in general." We can find nothing in the editorial attacking any youth group other than the DuBois Clubs. The argument that because the DuBois Clubs of America is alleged to be "foremost among the activities directed against our young people" by the Communist Party, other "youth groups" are likewise implicated, is not persuasive.

Mr. Kunstler has also stated the issue raised in the editorial as whether the DuBois Clubs are "Communist dominated and controlled." Exception was taken by Storer to this statement of the issue on the ground that it is "not responsive to the broadcast" because the term "dominated and controlled by American Communists" was applied only to the alleged "special meeting" at which the DuBois Clubs of America was founded. But the clear thrust of the editorial is to characterize the DuBois Clubs as a Communist organization, against which the American public, and particularly American youth, should be on guard.

This constituted a personal attack upon the DuBois Clubs. Under established Commission policies, where a personal attack occurs in connection with the discussion of a controversial issue of public importance, the person or group so attacked is to be notified and given a reasonable opportunity to respond. Public notice of July 1, 1964, page 10420. The controversial issue of public importance here is whether the DuBois Clubs is an organization established and used by the Communist Party of the United States to subvert the minds of American youth. Storer believes that it is, and therefore deemed it important to alert its listeners to this danger. The DuBois Clubs denies that it is a Communist organization and seeks an opportunity to present its side.

Storer, while conceding that the question is a difficult one, urges that the statements in its editorial are not controversial within the meaning of the fairness doctrine because they reflect statements made by Attorney General Katzenbach and the Federal Bureau of Investigation, particularly those made by the Attorney General in his March 4, 1966, verified petition filed with the Subversive Activities Control Board (SACB). Storer urges that "the contrary viewpoint of an organization which has been governmentally identified as Communist established, dominated, and controlled, is not a significant opposing viewpoint within the meaning of that doctrine."

The DuBois Clubs is contesting the validity of any action by the SACB. In effect, Storer's argument is thus that if a mayor were indicted for embezzlement, it could editorially condemn the mayor on this ground, and need not afford time for response, since the allegations in the indictment suffice to take the matter out of the controversial area. As we have stressed in other similar areas, the truth or falsity of the attack is not a matter for determination by this Commission. The short answer is that in these circumstances the licensee cannot aver that the attack is true and therefore there is no need to let the public hear the other side; that rather the other side must be given an opportunity to reach the public, which will thus be in a position to make its judgment on this issue which the licensee chose to present as one of importance to his audience..

At the risk of going over well plowed ground, we think that the latter point should be amplified. We have stressed that our holdings, from the *Editorializing Report*, 13 F.C.C. 1246, 1947–48 (1948) to the recent *Pacifica* decision (36 F.C.C. 147, 149 (1953)), and *KTYM* decision, 4 F.C.C. 2d 190 (1966), appeal pending, *Anti-Defamation League* v. *Federal Communications Commission*, case No. 20770 (C.A.D.C.), have sought to promote the fullest possible robust debate on public issues. We recognize that it may be urged that our action here is inconsistent with the above objective—that it will inhibit Storer and other licensees from present-

ing such robust points of view as the editorial in question. We do not believe that it will do so.

If a licensee determines that it serves the public interest to broadcast or permit to be broadcast a personal attack on some group or person, including public officials, we believe that he will do so, and will not be deterred by the consideration that there will be a right of reply. The premise of the contrary position is that the licensee is willing to alert his audience concerning an important issue, only if he can be sure of doing so in a one-sided manner; that he does not trust the public to hear both sides and then make up its mind. But as the courts have noted in first amendment cases (e.g., *Associated Press* v. *United States*, 326 U.S. 1 (1944)), this Nation has staked its all on the proposition that the public should be given the opportunity to hear the fullest, most wide open debate on public issues. Responsible broadcasters recognize this, and when they have covered such issues, take steps to persent the other side. (See *Hearings Before the Communications Subcommittee of the House Interstate and Foreign Commerce Committee*, 88th Cong., 1st sess., p. 87; *Letter to WEAL*, FCC 64–744, July 29, 1964.) It is our experience over the years of operation in this area that there has been no indication of inhibition of robust debate by our fairness policies; indeed, such debate has been increasing, not declining, during the last 7 years when the personal attack principle was being developed and brought specifically to the notice of all licensees (e.g., Public Notice of July 26, 1963, FCC 63–734).

Even assuming that there were an inhibiting factor, which has not been demonstrated, we believe that it could affect only a few, and that the vast majority of broadcasters, acting responsibly in the public interest, will follow these fairness precepts and will continue the trend which we observe toward more and more "robust, wide-open debate." Of the few who might be inclined to present an attack or an issue only if they can do so in a one-sided manner, most will, we believe, adjust to the necessity of affording the public an opportunity to hear both sides. A decision to avoid presenting controversial programing altogether because of the requirement of fairness would be clearly inconsistent with the obligation "under this chapter to operate in the public interest and to afford reasonable opportunity for the discussion of conflicting views on issues of public importance" (Communications Act, sec. 315(a), 47 U.S.C. sec. 315(a)). Finally, we cannot properly obtain a contribution to public debate by adopting the concept that the public airwaves may be restricted by the licensee solely to the presentation of views which he espouses or with which he agrees. Such a course is inconsistent with the act (sec. 315(a)) and its underlying concept that the broadcaster, for the duration of his license, has the preferred position of determining the material to be presented over his frequency and thus must act as a public trustee. We believe, therefore, that even assuming some minor inhibiting factor, the fairness principles, including our action here, affirmatively promote, rather than hinder, the above-quoted policy objective in KTYM, and are "essential to insure 'the maintenance of radio and television as a medium of free speech and freedom of expression for the people of the Nation as a whole "Editorializing Report," 13 F.C.C. 1246, 1248)'" (KTYM, supra, at p. 217).

Your letter points up the "careful and good-faith consideration" given by Storer to the matter, and that "it welcomes the Commission's views." We recognize that such consideration was given. We hold, upon the basis of the foregoing, that time should be made available to the DuBois Clubs of America for reply reasonably related to the attack in the editorial; namely that the DuBois Club is a "Marxist" or "Red" group, "founded at a special meeting in California dominated and controlled by American Communists," which is "foremost among the activities currently directed against our young people" by the Communist Party of the United States in "an intensive effort to subvert the minds of American youth," and which mispronounces its name "boys club instead of the DuBois Clubs to deliberately deceive prospective members." (See letter to WALG, 4 R.R. 2d 277).

By direction of the Commission.

BEN F. WAPLE, *Secretary.*

DISSENT BY COMMISSIONER ROBERT E. LEE

I strongly support the Commission administration of the so-called fairness doctrine. I believe it to be the right of every citizen to receive all sides of controversial issues. I depart from this support in this case, however, since I believe that

a degree of judgment must be exercised at some point. As far as I am concerned, the definition of a controversial issue of public importance does not include the issue of communism (3 RR 2d 175) nor of atheism (5 RR 2d 263) as we have previously held. The fairness doctrine ends at the international border and I would not take the responsibility of turning the microphone over to those who would advocate the overthrow of the Government by other than the democratic process.

We cannot look with equanimity upon those whose words or actions have already left in their wake, a trail of violence. "Overthrow of the Government by force and violence is certainly a substantial enough interest for the Government to limit speech. Indeed, this is the ultimate value of any society, for if a society cannot protect its very structure from armed attack, it must follow that no subordinate value can be protected." *Dennis* v. *United States* 341 U.S. 494.

In this case the W.E.B. DuBois Club has been labeled by responsible Government sources as being a creation and the invention of the Communist Party. It is not necessary to list the lengthy documentation of this conclusion but I find it persuasive.

Suffice it to say that the "indictment" of the organization was made on March 4, 1966, when the Attorney General petitioned the Subversive Activities Control Board to order the DuBois Club of America to register as a Communist-front organization pursuant to the provisions of the Internal Security Act of 1950. The petition was buttressed by an affidavit documenting the evidence. The clubs went to court alleging the unconstitutionality of the Internal Security Act of 1950. The court refused to enjoin the Attorney General; however, it did grant a stay of hearing until the appeal could be heard in the Supreme Court.

It is my understanding that hearings before the board are scheduled in New York within a matter of weeks. Under these circumstances the Commission would now give them the airways to help fight their case. If the Commission would not deny the right to the airways, would it not at least be prudent to take no action pending the outcome of litigation. To provide them air time at this time seems to me to be an overdose of tolerance. Is the neo-Nazi political party to be next?

EFFECT OF TV ON VIOLENCE

Mr. GIAIMO. Bearing in mind that the Government cannot and should not censor, one of the areas of great concern—and I am curious as to what the Commissioners' views or thoughts on this may be or what kind of work or studying you may be doing concerning this—one of the great concerns we are facing in our urban problems, as you know, is the charge which is repeatedly made by many people that television is making a substantial contribution to violence because of the sensationalism involved and because of the swiftness with which television can and does cover a newsworthy item such as a riot. And more and more we hear concern expressed that television is not contributing toward a solution of this problem but is actually inflaming it.

I am wondering what, if anything, the Commission has done in this area to study it, to look at it, perhaps to make suggestions of some type.

Mr. HYDE. We, of course, are aware of the comment that has been made on this subject, that some folks have suggested in the interest of getting the news story a station may have cooperated in the projection of a riot situation. We have been rather concerned about the possibilities that if we undertake to investigate the dissemination of news and distribution of news, that our position as licensing authority would make that to look like an untoward interference in dissemination of news.

Now, since there are other agencies undertaking an investigation of this, we have thought as the licensing authority it would be best if we lend such assistance as might be required of us but let this matter of investigating dissemination of news to these other agencies.

There is the Commission on Civil Disorders, which is giving a substantial attention to this and I believe there is a Senate committee that is also studying it.

ACCURACY OF NEWS REPORTING

Mr. EVINS. I received a call one night from a respected judge. He said:

I just looked at a television report on the war in Viet Nam. The newsman said a whole division was wiped out. My son is a lieutenant in that division. I called the Pentagon and they said "We have no list of any officers having been killed at all."

The television report said,

The division was wiped out.

This is inaccurate reporting.

Mr. HYDE. There are occasions when we are sorely tempted to abandon our principles against Government censorship of news or opinion.

Mr. EVINS. One of the prime objectives of the Commission is to promote competition.

Mr. HYDE. That is right.

Mr. EVINS. Perhaps with this all viewpoints will be promoted.

Mr. HYDE. The public will be given an opportunity to choose. I grant you that this is not as good an answer as we might wish for.

Mr. GIAIMO. It is not. It is not a question of competition. The dull person does not make news. The inflammatory person does.

Mr. HYDE. Hasn't this always been a problem of the press?

Mr. GIAIMO. Yes. I do not know the answer at all. I am just curious as to whether your Commission has concerned itself with this.

Mr. LOEVINGER. I have personally concerned myself with this. I have made some investigations and I think there are some examples of very bad performance by television, and by radio. There have been examples of excellent performance by television. There is one famous example in San Francisco where a television station is credited with having prevented a riot, as apparently a riot was getting underway. At the request of the mayor, one station made arrangements to cancel its amusement program for the afternoon and broadcast a baseball game thought to be very attractive to the men who might riot, and by putting on the baseball game they are credited largely with preventing a riot. However, in my judgment it is not the business of the FCC to pass judgment on any of these things. I have made an attempt to analyze the diversity of news sources, and the diversity of broadcasting news sources today is vastly greater than the diversity of print news sources. In fact, it is greater than the diversity of print news sources have ever been in this country.

The maximum number of daily papers we had in this country was somewhere around 3,000. We are now down to around 1,700, whereas the diversity of broadcasting sources is considerably greater than that. I think that the abuses in news reporting is part of the price that we have long since decided to pay for a free press and free discussion. I personally am persuaded it is worth the price.

Mr. LEE. I did a little research in that area. I made a speech at Notre Dame recently in which in effect I detailed some of these examples that you mentioned. I cautioned them.

As the judge said:

We are not about to be censors, but their obligation is to report the news, not to make it.

I would like to send copies of it to the members, if I may.

Mr. EVINS. We would be delighted to have that.

(The information follows:)

REMARKS OF COMMISSIONER ROBERT E. LEE, FEDERAL COMMUNICATIONS COMMISSION CONFERENCE HELD AT THE CONTINUING EDUCATION CENTER AT THE NOTRE DAME UNIVERSITY, SOUTH BEND, IND., JANUARY 24, 1968

RESPONSIBILITIES OF STATIONS IN NEWS PRESENTATION

A network commentator, covering the 1964 convention, spotted a civil rights demonstrator who had prostrated herself on the convention floor. He told the control room director, who replied that it would be a few minutes before he could put him on the air. When the commentator asked the woman how long she planned to remain there she raised her head slightly and asked "How long would you like?" The responsible judgment of what constitutes news is most demanding on the TV news media. I believe this requires something more than a beard and a guitar. Are they looking for news or viewers? I think you should look for news.

"When people see it on TV they are experiencing it for themselves," said Fred W. Friendly, one-time head of CBS News and now professor of Columbia University Graduate School of Journalism. "It must be true, the viewer feels because he is seeing it. We cannot tamper with that trust or we will lose everything." NBC issued a directive last summer stating that no newsman is to arrange, modify, stage, schedule, or reenact a news event. I believe most radio and TV stations now have similar instructions or an operating policy.

Like all rules, there are exceptions which require responsible judgment. Clearly there would be no problem when a presentation to an honored guest is reenacted. But should a newsworthy person be asked to walk fast or slow to better cover a demonstration in the background? What if background music or applause is added to a program? Consider the cameraman who missed filming a hoodlum demonstrator throwing a rock through a window. Fortunately the broadcaster has already answered most of these questions and presents the event unchanged as it happened. This responsibility assumed by broadcasters is no accident; it is their direct recognition of the right of free speech granted by our Constitution, which right has repeatedly been reaffirmed by the courts, the Communications Act and the rules and policy of the Federal Communications Commission.

The freedom enjoyed by the broadcast news media is not absolute. It is difficult at best to focus on a human being or event which presupposes that an initial decision has tentatively been made and that this particular person or event is newsworthy. TV coverage even though entirely complete and accurate can, because of lighting, camera angle and other technical factors, completely distort the news. Thus there is the responsibility of reporting pictorially, what was said or done, without technical distortion.

In this and other respects, the broadcast media is at a disadvantage with the print news media. The print media enjoys the luxury of evaluating the newsworthiness of a President's statement or other important event after it has occurred rather than carrying them as they occur. Consider coverage of an automobile race, live on TV. Normally you would expect to film the skill of the drivers with possibly the main event bring an interview with the winner. But what if the main event is a tragic and painful death? The TV newsman here must make an instant decision which balances the public's right to know consistent with good taste and the modes of the times.

When TV seeks to cover an important national figure, conditions may apply which would not appply equally to the print news media. Recently this entire matter was brought to the public's attention when Richard S. Salant, president of CBS news, frankly told viewers that an interview with the President had been subject to some degree of control from the White House. TV coverage may often involve the power of some degree of veto as a predetermined condition of the interview.

There are also situations in which the very nature of TV coverage require the newsman to be conversant in either local, national or international affairs. On-the-spot radio or television news coverage may inadvertently jeopardize a delicate local, national, or international situation. A delay in reporting such an event may properly be indicated. I do not classify this as censorship. It simply reflects responsible self-discipline in making judgments based on a great deal of experience and professional integrity on the part of the newsman.

TV has an added hardship in that it serves both as a news reporting medium and platform for various political views. Unlike the editorial section of a newspaper or magazine, the TV viewer is not always able to emotionally or intellectually distinguish between the two. TV bears a responsibility in news presentation which is greater than any other news media before in our history. Mistakes have been made and will be made in the future. However, the broadcast news media on the whole has met, in my opinion, and dealt with each new challenge as it appeared. This has been accomplished through the broadcasters' self-imposed code. This responsible approach is the only way the forward-looking responsible broadcaster maintains the rights granted him by our Constitution and the corresponding duty which any right involves.

We now have a new factor to deal with. This is the ETV station and the support it will receive from the newly created and as yet unfunded Public Broadcasting Corp. I believe that the proper acceptance of the ETV station can bring a new dimension to both the commercial and ETV stations.

Network and locally originated news has matured and, in my opinion, performs a very, very good job. I see no reason why ETV stations under the Public Broadcasting Act should compete in the area of regularly scheduled hard news. The ETV station can perform a worthwhile service in analyzing the news, panel shows and editorials in depth.

I recognize, of course, that there is no such proscription in the enabling legislation and as a matter of fact, the Carnegie Report which is the catalyst of the Public Broadcasting Act makes much of the contribution that they may make in the area of live news. On reflection, I merely indicate my concern with such programing not because I would not trust the integrity of the PBC broadcaster but rather because I believe live news may carry the appearance of bias from a Government sponsored corporation. Unhappily, human nature is such that bias is defined as that with which one disagrees.

As I read the debate on the Public Broadcasting Act of 1967, however, I am struck with the legislative intent of not creating competition to the existing broadcast structure but rather to provide a new and exciting choice to the discriminating audience.

With the Board of Directors appointed by the President and the use of Government funds, it is difficult indeed to look at ETV as a completely non-Government function.

Actually, in this area of financing ETV broadcasting, I believe that significant financial contributions from commercial stations may result in substantial benefits to all parties, including the public. I have considered various proposals for Government and private support, including the excise tax of 2 to 5 percent on new TV set sales and charitable contributions by commercial broadcasters, private industry and various foundations.

I feel that industry support of ETV should properly be considered a business expense of the commercial broadcaster. I have from time to time attempted to create a dialog on an idea I have had. I might as well try it on you. All broadcast stations are licensed to serve in the public interest. This has been interpreted as including a concern with the type of programing that a proposed station intends to "air" to "serve the needs of the community."

The concern of the Commission with programing vis-a-vis a prohibition against censorship has been a complex administrative problem. It seems to be resolving itself into a deep concern with the expertise of the licensee in the programing area. The Commission concern is to insure that the licensee is indeed an "expert" in the needs of the community and how these needs are being served by competing

media. When analysis shows him a void that he can fill his programing schedule, he files his proposal with his application. The Commission properly quizzes its licensees as to what they have done to make themselves "expert" and having reached affirmative judgment, largely relies on the programing proposals submitted by the applicant. Thus, it becomes the licensee's "promise" against which is measured his "performance" at renewal time at a later date. One caveat. It would be unrealistic for the Commission to bind the licensee to his precise promise for a 3-year license period. New media enters the market, the effect of which the licensee analyzes to determine what, if any, programing changes he should make to tailor his so-called "void." After notification to the Commission, this amends his original proposal. Thus we have, for example, stations which program all news, religion, ethnic, advertising and music. This presupposes that the licensee survey has shown the totality of other broadcasting media provides the community with well-rounded programing.

The basic problem with commercial broadcasting today is the intense competion for a small amount of broadcast time. There are only 18 hours at most in the full broadcast day. Actually, given our living habits, there are only 3 or 3½ hours—usually from 7 to 10:30 p. m.—when most adult human beings find it convenient to watch television. The broadcasting networks and broadcasting stations are in enormous competition simply to deliver the largest possible audiences during this time segment. With the exception of the 7 o'clock news programs on some stations, the general public generally has no choice but to watch the mass appeal programs. At the risk of being inconsistent with my previous remarks, I might say that on Sunday night even the news programs are somewhat curtailed. Moreover, only a minute or two can usually be given on the news programs to, say, a major report on a very basic issue—a report to which even the small newspapers would give a thousand words and which would be reported in full in some newspapers and magazines. In brief, on most evenings the average citizen who wishes to be better informed or to stretch his mind a bit or even dip into the best in our culture has no opportunity to do so—he is deprived of choice.

The educational station in a service area is a part of the media that the licensee analyzes. To the extent that the educational station is airing special interest viewing, it may not be necessary for the commercial station to carry as much of this type programing as might otherwise be necessary to meet the needs of the community.

Thus it seems to me, the commercial station has a selfish motive in insuring the continuation of a viable educational station, and limiting his obligation to carry programs that he cannot sell. By appropriate encouragement, he might be persuaded to undertake an annual contribution to the station, in his budget, to insure that the educator stays on the air for a full program schedule. Under this reasoning, he should be able to charge off such contributions as a business expense. To this extent both the responsible commercial and educational TV station serving the same community can better allocate their prime time evening hours. For example, the commercial station could provide greater depth in its regular hard news coverage realizing that the in depth analysis need not be provided because this is the function of the adequately financial ETV station. As a matter of fact, on a current basis, there is a possible marriage between commercial and ETV television stations. (I hope one or the other will not get pregnant.) ABC has already announced that does not intend to cover the Republican and Democratic Conventions from gavel to gavel. I do not see why all networks could not cooperate and financially support the ETV coverage from gavel to gavel. The networks would then be free to monitor the entire conventions and select for presentation what they choose. Also any member of the public, would have a choice to view the entire proceedings over ETV.

A commercial station can, of course, make a tax deductible charitable contribution to an educational station. However, I find that revenue regulations limit tax deductible charitable contributions of all kinds to 5 percent of the companies' taxable income and this could be a limiting factor in the amount the commercial station could contribute to the educational station. If my reasoning is sound, it follows therefore that support should be given to a proposal to regard these contributions by commercial stations to educational stations as a business expense. The presentation of news over broadcast media has now become one of the public's primary sources of news. They want more of it and they want the details which are not possible with headline or capsule news presentation. They also want to know what the other fellow thinks.

One of the matters you will be discussing in this National Television News Conference is a new element, public opinion polling. Regardless of the judgments you may reach on the merits of television polling, I welcome the broadcasters use of new methods to inform the public. From what I can observe, the public opinion is not without problems. Students could have a ball loading the results. They can have one group repeatedly call in with a "yes" vote and another group with a "no" vote. This not only distorts the public's view but also may deny the vote to someone with a genuine interest in the issue. It is also possible for special interest pressure groups to alert their membership and insert an unknown loading factor. Many other statisticals inaccuracies can creep into such polls.

Time magazine in its October 20, 1967, issue cited an example of one city having inconsistent votes on related questions and that one station discontinued its poll when 82 percent of the listeners indicated they believed poll results invalid. In essence, the question is "Do broadcast polls or poll results constitute news?" The broadcaster is aware of the problems and his response is an automatic caution signal.

The broadcast industry has and must in the future assume responsibility for the news it presents. Our system will simply not permit or tolerate news to be presented under the auspices of the Government. Yours is the responsibility to accurately report the news. We both have a responsibility to make sure this right is not diluted. This requires a great deal of mature commonsense.

If your judgment is to program these polls, so be it. I would caution disclaimers as to results and I would certainly coordinate closely with your local telephone company to insure that local communications are not jammed, particularly those involving safety of life and property. There have been some specific examples of this problem.

Mr. EVINS. I think that you can exercise a salutary influence on the industry.

Mr. HYDE. I believe this group organized by the President to make a study in this area is going to be very helpful.

FORFEITURES OF LICENSES

Mr. EVINS. Forfeitures of licenses. Have you done much in this area?

Mr. HYDE. We do a very sizable amount of that. I suppose almost weekly there will be a notice of forfeiture for what are found to be willful or repeated violations of rules or regulations. These usually relate to technical performance, failure to have an operator on, and so forth.

Mr. EVINS. Page 29, significant accomplishments. More than 59,000 complaints, comments, and inquiries on broadcast matters were received last year. Also, 159 notices of apparent liability for monetary forfeiture were issued.

Mr. HYDE. Yes, sir. That is the initial notice.

Dependent on the response, we assess the fine or we do not.

APPLICATION WORKLOAD

Mr. EVINS. Short-term licenses were granted to 10 stations, four license renewal applications were designated for hearing, and revocation proceedings were instituted against two stations.

Here is a table on your application processing personnel and applications received.

Place this table in the record.

(The chart follows:)

The following table shows the increase in the number of applications received in the broadcast services compared with the personnel authorized for application processing activities:

Fiscal year	Applications received for processing	Application processing personnel
1957	9,721	103
1958	10,361	106
1959	12,019	119
1960	12,647	120
1961	15,522	122
1962	15,571	139
1963	14,565	124
1964	15,761	132
1965	16,924	143
1966	17,999	146
1967	18,290	140
1968 (estimate)	19,377	137
1969 (estimate)	21,073	141

HEARINGS

Mr. EVINS. Place pages 35 through 39 in the record.
(The pages follow:)

HEARINGS

This activity encompasses all adjudicatory proceedings involving applications for new and changed facilities, applications for renewal of licenses, revocation proceedings and other matters pertaining to broadcast services.

PERSONNEL BY ORGANIZATION

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Broadcast Bureau	32	29.6	27	23.9	27	23.9	----------	----------
Hearing examiners	20	21.3	20	18.7	20	18.2	----------	−0.5
Review Board	27	24.0	27	21.5	27	25.3	----------	+3.8
Opinions and Review	12	12.5	13	12.5	13	12.5	----------	----------
Dockets Division	12	9.2	12	9.1	12	9.1	----------	----------
Total	103	96.6	99	85.7	99	89.0	----------	+3.3

PERSONNEL BY SERVICE

AM	59	55.1	56	47.7	56	50.6	----------	+2.9
FM	16	14.6	15	15.0	15	13.6	----------	−1.4
TV	28	26.9	28	23.0	28	24.8	----------	+1.8
Total	103	96.6	99	85.7	99	89.0	----------	+3.3

BROADCAST APPLICATIONS DESIGNATED FOR HEARING

	1967 actual	1968 estimate	1969 estimate
AM			
New and major changes	92	93	95
Licenses and all others	0	3	3
Renewals	5	12	15
Assignments and transfers	8	2	2
Total, AM	105	110	115
FM			
New and major changes	61	70	75
Licenses and all others	1	2	2
Renewals	1	1	2
Assignments and transfers	6	1	1
Total, FM	69	74	80
TV			
New and major changes	51	59	63
Licenses and all others	1	3	4
Renewals	0	3	5
Assignments and transfers	7	1	1
Total, TV	59	66	73

Increase requested: Positions, 3.3 A.E.

No additional positions are proposed. The increase reflected above is to maintain the existing staff. The increase in employment level will result from a reduction in the period of time that positions will be unfilled.

BROADCAST BUREAU

In adjudicatory proceedings involving broadcast matters, the Broadcast Bureau participates at all three levels of administrative adjudication, namely, before the hearing examiners, before the Review Board, and before the Commission. The Broadcast Bureau participates in all these cases and in all of their phases, except for the strictly comparative phases not involving engineering or a comparison of the relative needs of competing communities. As of the end of calendar year 1967, there was a total of 163 broadcast cases in various stages of adjudication. In fiscal year 1969 it is anticipated that this number will increase by nearly 10 percent, in view of the increase from 250 (in fiscal year 1968) to 268 (in fiscal year 1969) in the number of broadcast applications expected to be designated for hearing. As indicated below, an increase in workload is also estimated by each of the three levels of administrative adjudication before which the Broadcast Bureau appears.

Notwithstanding an anticipated increase in workload, the Broadcast Bureau is not requesting an increase in authorized personnel for fiscal year 1969, nor does it anticipate any increase in actual employment. Continuation of the presently authorized staff is requested. This is an extremely modest staff for an anticipated caseload of 180 cases.

HEARING EXAMINERS

It is estimated that during fiscal year 1969 approximately 115 AM applications will be designated for hearing, as compared with 110 in fiscal year 1968 and 105 in fiscal year 1967. In addition, there will be carried into fiscal year 1969 from the current fiscal year at least 100 AM applications (chiefly for new facilities and major changes in existing facilities), concerning which hearings will be in progress or the hearing records will be closed awaiting the preparation of initial decisions by the hearing examiners; and it may reasonably be expected that about 12 AM applications will be remanded to the hearing examiners (by the Commission and the Review Board) for further hearings and the preparation and issuance of supplemental initial decisions. The number of AM renewal applications to be designated for hearing during fiscal year 1969 is expected to be substantially higher than in fiscal year 1967 and somewhat higher than in fiscal year 1968. For the most part, renewal hearings are conducted in the communities in which the stations involved are located and are usually protracted. It would appear that at least 50 percent of these AM applications will be involved in comparative hearing proceedings.

Approximately 80 FM applications are expected to be designated for hearing during fiscal year 1969, as compared with 74 in fiscal year 1968 and 69 in fiscal year 1967. In addition, it is probable that some 50 FM applications with hearings in progress or closed records will be carried into fiscal year 1969 from the current fiscal year, and there will undoubtedly be several remands from the Commission and the Review Board for further hearings and the issuance of supplemental initial decisions. Approximately 50 percent of the total number of FM applications here involved will require comparative consideration.

Approximately 73 TV applications are expected to be designated for hearing during fiscal year 1969, as compared with 66 in fiscal year 1968 and 59 in fiscal year 1967. In addition, at least 60 TV applications in hearing status will be carried into fiscal year 1969 from the current fiscal year, and it is likely that there will be several TV applications remanded for further hearings and the issuance of supplemental initial decisions. Undoubtedly, the hearings on a substantial number of these TV applications will be extensive and large records will be made. Renewal hearing proceedings in the TV service invariably are time consuming and bitterly contested.

REVIEW BOARD

The actual average employment figures reveal that, operating with a staff substantially below previous levels due to the unavailability of qualified replacement personnel, the Review Board devoted 24 man-years to broadcast activities during fiscal year 1967. To reduce the time for the disposition of appeals from initial decisions to 6 months, the Board will utilize during fiscal year 1969 the four employees authorized for this purpose by the Commission (budget policy meeting. May 31, 1967). For fiscal year 1969, the Board allocates 25.3 man-years for broadcast activities.

Based on the man-years required to reduce the time for the disposition of appeals from initial decisions to 6 months, and to provide for proper handling and considerable increase (32 percent over earlier estimates) in standard broadcast applications actually designated for hearing in fiscal year 1967, the Board has planned an increase of 1.7 man-years over the fiscal year 1968 estimate. Similar slight increases were planned in the man-years devoted to reducing the time required for action on initial decisions in FM and TV preceedings. Thus, the Board's 7.7 man-year-figure for TV cases in fiscal year 1969 was a conservative estimate based on the actual average employment figure of 6.3 man-years for 1967 (when 59 TV applications were designated for hearing) considered in relation to reliable estimates that the number of such applications designated for hearing would increase in fiscal year 1969. Due to budgetary restrictions, however, the following average employment figures are assigned to the Board: AM 15 man-years, FM 3.6 man-years, TV 6.7 man-years.

OPINIONS AND REVIEW

The Office of Opinions and Review continues to receive a substantial flow of AM cases resulting from remands necessitated by court decisions, in addition to the renewals and revocations designated for hearing with which it is charged. Applicants continue to test Review Board decisions by the appeal route, adding to the workload of this office which must review these appeals and submit them to the Commission. The Commission's recent modifications of its AM rules, such as the go-no-go and clear-channel rules, and its policy statements on comparative criteria and on principal city-suburban community service, have resulted in increased appeal activity. These same rule changes and policy statements have also increased the flow of petitions for reconsideration of hearing designation orders seeking grants without hearing, which are reviewed and presented to the Commission through this office. With the loading impact of CATV on the hearing processes this petition workload has been increasing and is expected to continue to increase. In addition, the Commission has directed oral hearing, in lieu of evidentiary formal hearings in certain AM cases, requiring extensive preparations, and it is anticipated that such oral arguments in lieu of evidentiary hearings will continue to be used wherever there is no substantial factual issue requiring evidentiary hearing.

Until all novel questions relating to the interpretation of the revised FM rules utilizing tabular assignments have been determined by the Commission, it is anticipated that appeals will be taken by unsuccessful applicants to the full Commission from Review Board decisions. The revised FM rules have also

resulted in an increase in the number of petitions to the Commission requesting reconsideration of its hearing designation orders and grants without hearing, which are presented to the Commission by this office. With the loading impact of CATV on the hearing processes the petition workload has been increasing and is expected to continue to increase. Under the delegations this office continues to handle renewal and revocation proceedings. In addition, the usual flow of appeals from Review Board actions in interlocutory matters is expected to continue.

The substantial workload for the Office of Opinions and Review in TV matters is expected to continue. Many comparative TV cases turn upon such narrow determination that an appeal to the Commission, requiring presentation through this office must be anticipated. Appeals granted by the Commission require preparation by this office of summaries for oral argument as well as the drafting of Commission final decisions. The flow of appeals from Review Board actions in interlocutory matters is expected to continue. Under the delegations this office is charged with the responsibility for handling all TV renewal and revocation proceedings. It is also called upon to handle cases where reopening of the records has been necessitated by court decisions. This office must also present to the Commission petitions seeking reconsideration of hearing designation orders and grants without hearing, and must prepare referenced material for such oral arguments as may be held at the Commission's direction. With the loading impact of CATV on the hearing processes the workload of petitions in connection with TV new and changed facilities is expected to increase.

NETWORK STUDY

Mr. EVINS. Network study. This activity keeps the Commission currently informed of the policies and practices engaged in by the radio and television network organizations to the extent necessary for the Commission to develop and maintain an adequate regulatory program.

This responsibility encompasses review, analysis, advice, and recommendations regarding relevant information on policies and practices engaged in by the network organizations, insofar as such policies and practices impinge upon the ability of station licensees to operate in the public interest.

What consideration, if any, has been given to allocating a percentage of network time to small business advertisers?

Mr. HYDE. I do not have a study on that subject.

Mr. EVINS. Tell us what you know about this. You have three of them, have you not?

Mr. HYDE. Yes, sir. There are three big networks. There are three big TV networks and three big AM networks—there are four radio networks.

Mr. EVINS. Three big television networks?

Mr. HYDE. Right. Generally speaking, as you have observed, the kind of advertising you will see on them will be national advertising. The advertising of sponsors who have a national market. The same stations may place a big importance on their local advertising, can carry advertising in their respective communities, in addition to carrying the national network.

Mr. EVINS. Does the Commission know which stations compose the networks?

Mr. HYDE. We do.

REGULATIONS ON ADVERTISING

Mr. EVINS. What do you do with regard to standards or rules on advertising?

Mr. HYDE. We have a series of regulations directed to the stations.

Mr. EVINS. How often do they come on the air?

Mr. HYDE. There used to be what were known as options for station time, which we thought gave the network too much control over what the local station could carry. We outlawed such options. Under the arrangements permitted under network contracts, which may not continue more than 2 years, stations generally get what are called first refusals. If they pass, the network is free to take the network program to another station if they wish. This is the type of regulation in this area and, as I say, they are directed to licensees.

Mr. EVINS. Does the Commission set a limit on the number of products that can be advertised in a period of time?

Mr. HYDE. No, we have not.

Mr. COX. We have addressed inquiries to stations to check their commercial policy if it exceeds certain levels. If a radio station tells us that it proposes to devote more than 18 minutes in an hour to commercials as a general matter, our staff will write them a letter inquiring as to justifications for this.

Mr. EVINS. You can do more than write them a letter; can't you call them in before the Commission.

Mr. COX. We have one case now in hearing, I think, in which, along with some other issues, we have raised a question about the commercial practices of the station.

Mr. EVINS. You have to listen to five commercials before you get to the news.

Mr. HYDE. That is particularly true in the very late hours, is it not?

Mr. BARTLEY. Six o'clock.

Mr. EVINS. If you merely write them a letter, they will not do anything about it.

Mr. HYDE. I would not dispose of it that way. There is an industry code. There are certain standards which stations propose in their renewals.

Mr. EVINS. What do you do, tell them to let the small station have a little time for station identification?

Mr. HYDE. That is right. They are required to identify their station within certain limits.

Incidentally, one time when the Commission proposed we might ease this identification requirement so as to avoid the necessity of making it, we did not find a single taker. They want to make that identification so that they can also make a mention of their sponsors at the same time. I do not think that is an unreasonable position to take.

PUBLIC HEARING ON ADVERTISING TIME

Mr. EVINS. Have you ever had a public hearing on the amount of advertising time?

Mr. HYDE. Yes, sir; we have had a public hearing on that.

Mr. EVINS. When was that?

Mr. HYDE. This was while Mr. Henry was Chairman.

Mr. COX. 1963. This was not with respect to a particular station; this was industrywide.

This involved the network and stations affiliated with them—largely the latter.

REGULATION OF NETWORKS

Mr. EVINS. Do you do anything in addition to writing them a letter?

Mr. HYDE. We do more than that. We do such things as adopt regulations to prohibit option time. That is the most significant regulation of recent times, but there are other things that we do.

Mr. COX. We ruled that one of the network's compensation method was illegal—a full-forcing system requiring its affiliates to carry more programs than they otherwise would. Our staff has been in liaison with the congressional staffs who have been studying network advertising discounts, and actually those practices have now been substantially eliminated. This removed one objection of small businessmen, small businesses, that the biggest businessmen were getting a break in the rates they paid.

Mr. HYDE. I think that was a very significant accomplishment.

CIGARETTE ADVERTISING

Mr. EVINS. Does the Commission contemplate any regulation or advice regarding cigarette advertising in view of another Commission's warning and also in view of the public health warnings?

Mr. HYDE. We are limited, of course, by the provisions of the Cigarette Labeling Act.

As you know, we did rule that the fairness doctrine applied to cigarette advertising. We are being sued for doing that, and one of the complaints is that we are violating the Cigarette Labeling Act.

Mr. EVINS. The Commission is being sued?

Mr. HYDE. Yes.

Mr. EVINS. I had not heard about that.

Mr. HYDE. It is an appeal. That is a suit, in my opinion. Perhaps I should have used a better term.

COMMON CARRIER ACTIVITIES

Mr. EVINS. Let us look at the common carriers.

Let us place in the record pages 43 through 55.

(The pages follow:)

III. COMMON CARRIER ACTIVITY

This activity covers the regulation of the rates, services and practices of communications common carriers which furnish interstate or foreign telephone or telegraph service for hire to the public by wire, radio or space communication, and the licensing of all radio used in common carrier communications including intrastate communications.

The function is accomplished through the Common Carrier Bureau and its field offices and those segments of hearing examiners, opinions and review, and dockets division of the Office of the Secretary and the review board which deals with common carrier hearing matters.

FINANCIAL REQUIREMENTS

	1967 actual	1968 estimate	1969 estimate	Increase
Personnel compensation	$1,958,650	$2,004,837	$2,199,151	$194,314
Personnel benefits	143,622	155,384	156,531	1,147
Other obligations	120,478	78,475	85,475	7,000
Total	2,222,750	2,238,696	2,441,157	202,401

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
1. Domestic rate regulation	82	74.4	83	75.2	83	79.2	----------	4.0
2. Domestic service regulation	11	10.8	12	10.7	12	11.7	----------	1.0
3. Domestic radio regulation	35	31.8	39	32.8	39	34.8	----------	2.0
4. Accounting regulation	19	16.4	18	15.7	18	17.7	----------	2.0
5. International and satellite communications	43	32.3	48	32.7	48	35.0	----------	2.3
Total	190	165.7	200	167.1	200	178.4	----------	11.3

PERSONNEL BY ORGANIZATION

Common Carrier Bureau	184	159.2	194	160.7	194	172.0	----------	11.3
Hearing Examiners	3	4.0	3	3.0	3	3.0	----------	----------
Review Board	1	.6	1	1.0	1	1.0	----------	----------
Opinions and Review	----------	.4	----------	.4	----------	.4	----------	----------
Dockets Division	2	1.5	2	2.0	2	2.0	----------	----------
Total	190	165.7	200	167.1	200	178.4	----------	11.3

Regulation of interstate and foreign communications common carrier services by the Commission is essential to the public interest to insure basically the establishment and maintenance of (1) adequate services and facilities to meet all reasonable demands for expenditious and efficient communication, and for the purpose of national defense; (2) reasonable rate levels for the communication services; and (3) rational rate structures, including nondiscriminatory rate, classifications, regulations, and practices for the services of common carriers.

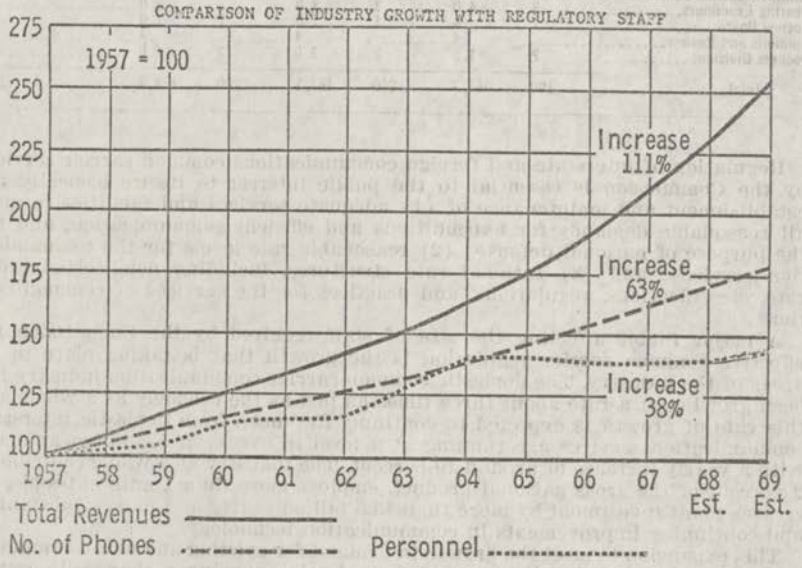
A major factor affecting the size of staff required by the Commission for effective common carrier regulation is the growth that is taking place in all areas of the industry. The domestic common carrier communication industry has been growing at a rate about three times as fast as the economy as a whole and this rate of growth is expected to continue. Revenues from domestic interstate communication services are running at a level in excess of $3 billion annually with a yearly increase of around 10 percent. The industry as a whole contributes 2 percent of the gross national product, employs more than 1 million people, increases plant investment by more than $3.5 billion yearly and makes substantial and continuing improvements in communication technology.

This expansion to meet the growth in demand for existing and new communication services is attended by new and revised price structures, changes in cost of service characteristics which underlie the different service, increased competition between carriers and a high rate of construction of wire and radio facilities which must be authorized by the Commission. Moreover, dynamic changes in communication technology and methods are creating new policy, ratemaking, licensing, and other regulatory problems in both the domestic and international fields.

The following table shows the increases in telecommunication revenues and number of telephones in service compared with the personnel engaged in common carrier regulation:

Fiscal year	Total revenues	Number of telephones	Common carrier personnel
1957	$6,964,000,000	63,847,000	115.4
1958	7,458,000,000	66,873,000	118.6
1959	8,144,000,000	70,819,000	119.3
1960	8,714,000,000	74,329,000	130.5
1961	9,255,000,000	77,473,000	132.9
1962	9,871,000,000	80,965,000	133.2
1963	10,543,000,000	84,443,000	149.1
1964	11,356,000,000	88,786,000	162.7
1965	12,174,000,000	93,660,000	162.4
1966	13,362,000,000	98,788,000	159.6
1967	14,698,000,000	103,727,000	159.2
1968 (estimated)	16,168,000,000	108,914,000	160.7
1969 (estimated)	17,785,000,000	114,359,000	172.0

COMMON CARRIER ACTIVITY - 3



The absolute figures on which the above chart is based can be found on page 44.

1. *Domestic rate regulation.*—This activity relates to the regulation of tariff charges, regulations, practices and classifications applicable to domestic interstate telephone and telegraph service. The allocated manpower requirements for Commission hearings related to this activity is included herein.

PERSONNEL REQUIREMENTS

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Telephone	41	36.7	41	37.0	41	38.5	.....	1.5
Telegraph	6	5.8	7	5.8	7	6.3	.....	.5
A.T. & T. rate investigation	35	31.9	35	32.4	35	34.4	.....	2.0
Total	82	74.4	83	75.2	83	79.2	.....	4.0

The purpose of this activity is to regulate the charges and tariffs applicable to domestic interstate telephone and telegraph service so as to protect the estimated 180 million or more people in the United States who use such service and who pay in excess of $3 billion a year for interstate communications service, (1) from exploitation through unreasonable or unjust rate levels, pricing practices, or monopoly profits, and (2) from unfair discriminatory treatment of any single user, or class of users, or any locality in the rate structures, classifications, subclassifications, regulations, or practices that are or may be applied by the regulated carriers to such service.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

Basic determinations made as to major components of the overall rate base and reasonable rate of return allowable on such rate base for the total interstate operations of the nationwide Bell System telephone companies.

Rate reductions amounting to $120 million a year ordered on basis of the above determinations.

In fiscal year 1968, the Commission is expected to act on proposals:

To require modification of tariff restrictions on interconnection of customer-provided devices and communications facilities to the nationwide exchange and message toll network.

To rule on a number of other pending formal rate and tariff cases involving a variety of important questions that will affect nationwide communications services.

Hearings will be held to resolve major problems concerning jurisdictional separations of interstate and intrastate facilities, the proper rate relationships among the principal classes of Bell System service, and the propriety of amounts claimed for other components of the rate base and operating expenses.

Increase requested: 4.0 A.E.

A principal handicap to expedited, informed and orderly resolution of ratemaking problems is inability to develop or acquire from the industry relevant and meaningful financial, operating, cost and demand data. Neither industry nor the Commission is now making use for regulatory purposes, to the extent possible, of recent developments in economic and computational techniques, including the use of econometrics, linear programing and electronic computers as an aid and support for rational ratemaking. The use of such techniques and the data base they would provide would materially enhance regulatory judgments with respect to determinations of rate of return, revenue requirements, rate structures, investment rates, etc., all of which are integral parts of the ratemaking process. In view of the ever-increasing complexities of ratemaking, it is essential that these modern techniques be fully utilized. To accomplish this requires that the Commission staff be in a position to apply such techniques on a continuing basis; and that the fact-gathering and reporting practices of the common carriers be so designed as to compliment and support the Commission's needs in these respects. Estimated manpower required in fiscal year 1969 to develop and implement this program, 2 man-years.

To handle requirements of the inquiry on the regulatory and policy problems presented by the interdependence of computer and communications services and facilities—1.5 man-years. The rapid development of computer technology with its direct relevance to communications has presented an immediate requirement for a broad scale study to determine the extent of the interrelationship between computers and communications in order to assure the orderly development of the computer industry and promote the applications of its technologies in such fashion as to serve the needs of the public effectively, efficiently and economically. It is anticipated that, because of the breadth of the issues, the economic interests concerned, and the possible far-reaching effects which could result from the inquiry, voluminous filings will be received which will consist of complex economic accounting, enginering and legal discussions with a diversity of views and opinions. All of this will require detailed analysis leading to the formulation of policy which will affect the socioeconomic development of our society.

Increased attention to domestic telegraph rate regulation is required because of the company's entrance into new fields, the offering of new and sophisticated telegraph services, possible TWX acquisition and to carry out the recommenda-

tions contained in the Commission's telephone and telegraph committees report in the domestic telgraph inquiry regarding promotional pricing, .5 man-year.

2. *Domestic service regulation.*—This activity relates to the regulation of the wire and radio transmission practices of communications common carriers who provide the public with interstate or foreign telephone, telegraph, video, and facsimile services for hire. The allocated manpower requirements for Commission hearings related to this activity are included herein.

PERSONNEL REQUIREMENTS

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Telephone	5	4.4	5	4.4	5	4.8	.....	0.4
Telegraph	6	6.4	7	6.3	7	6.9	.....	.6
Total	11	10.8	12	10.7	12	11.7	.....	1.0

Since virtually the entire social, economic, and business structure of this Nation is heavily dependent upon the availability of public communications services being provided by the domestic common carriers, it is important to insure the continuity of such vital services under reasonable rates and conditions. To this end, it is necessary to keep their activities under constant surveillance in connection with proposed mergers, acquisitions of properties, extensions and reductions in service, and the uses progressively being made of new techniques and engineering advancements in the communications art.

Close liaison by the Commission's staff with the general public and the carriers is necessary in resolving any service difficulties which the public may encounter because of transmission deficiencies or in connection with the business practices of the carriers providing such service.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

During 1967, 706 telephone company projects were considered and authorized, involving $280.2 million for wire facilities and $134.7 million for microwave facilities. Because of continued plant expansion by the telephone industry to meet public demands for communications services, increased application filing is expected in fiscal 1968.

Approximately 350 public service complaints against the telephone companies were resolved through liaison with the carriers and with the various State regulatory bodies during 1967, and handled approximately the same number of telegraph service complaints.

Authorizations were granted to Western Union Telegraph Co. to extend or supplement its transmission system by additional construction of some 733,000 channel miles in its own microwave system, and through the leasing of approximately 572,000 channel miles from Bell Telephone System Co. during 1967.

The Commission granted some 300 applications filed by Western Union to reduce the hours of service at public telegraph offices and authorized the company to discontinue 200 telegraph agency offices, upon finding that, because of small traffic load involved and availability of alternate facilities, the public convenience and necessity would not be adversely affected.

In June 1967, the Commission advised Western Union that, because of the further deterioration of its speed of telegraph service, it was expected to improve such service to meet its own announced speed of service objectives by the end of the calendar year 1967. During the ensuing 2 months, substantial improvements have been noted, which are to some measure attributable to the surveillance program of the Commission's staff and the close liaison with Western Union officials relative to service improvements.

The Commission also has modified internal procedures to facilitate processing of applications and reduce the time required for staff action.

Increase requested: 1.0 A.E.

The rate of expansion of the communications services during 1967, which is reflected above, and the complexities of problems connected therewith are expected to increase during 1968. To do a more effective job of regulation, it is necessary that the staff handling such functions be increased. Specifically, the additional positions are required for the review of cost and usage estimates of common carrier facilities in connection with the processing of applications, and to handle emergency communications functions assigned the Bureau.

3. *Domestic radio regulation.*—This activity relates to the licensing and the operational regulation of the domestic common carrier radio services, including point-to-point microwave radio service; local television transmission service; the domestic public land mobile radio service; rural radio service; the developmental radio serice, and the joint performance of such functions with the aviation and marine division of the safety and special radio services bureau in connection with the rendition of public radio services through land, maritime and aeronautical stations. The allocated manpower requirements for Commission hearings related to this activity is included herein.

PERSONNEL REQUIREMENTS

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Domestic radio	35	31.8	39	32.8	39	34.8	.....	2.0

This activity is significantly vital to the public and national interests because of the increasing use and reliance of the domestic common carriers on radio. Included within this activity are:

Detailed engineering analyses looking to the establishment of the most desirable routes and the most efficient utilization of the scarce-frequency spectrum, both microwave and VHF;

Updating of technical rules and regulations to keep pace with dynamic communications technology;

Enforcement of compliance with the regulations and relevant statutes;

Processing of applications requesting new or modified facilities in the domestic common carrier radio services.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

A substantial reduction in the application backlog.

Completion of rulemaking which extends the license period for domestic land mobile radio service and rural radio authorizations from 3 to 5 years.

In fiscal year 1968 further reductions in application backlogs and in time required for application processing are expected.

Issuance of rules directed toward increasing utilization of certain common carrier frequency bands.

Increase requested: 2.0 A.E.

The increasing importance of the common carrier radio services and rapidly advancing communications technology demand prompt staff consideration and action on applications. Backlogs, if permitted to accumulate, create internal processing problems, delay essential services to the public, and often result in financial hardship to applicants. Our current goal is that each properly completed application shall receive staff action within a period of 90 days after filing with the Commission. The present staff complement is not adequate to meet this goal.

The rapid expansion of CATV systems has resulted in increased application filing for CATV microwave links. More and more, these applications are creating policy, legal, technical, and economic problems.

With the advent of satellite system earth stations sharing the same frequencies used by domestic microwave systems, there is an ever-increasing need for detailed engineering analysis of applications to assure against mutual interference. Moreover, as the public demand for common carrier radio services continues to

outstrip the availability of usable radiospectrum, new facilities must be added to areas which are already crowded with facilities where existing radio services are entitled to protection against harmful cochannel electrical interference and consideration of claims of adverse economic impact. This condition requires more penetrating analysis of applications from engineering and legal viewpoints and is resulting in a greater number of hearing cases.

The increased Commission, Government and industry activity in study programs related to frequency congestion, including those portions of the spectrum assigned to common carriers demands greater participation by professional staff members engaged in domestic radio regulation.

4. *Accounting Regulation.*—This activity relates to the regulation of accounting in the broad sense of that term. It involves the development, amendment, and interpretation of accounting and records-retention rules; preparation of financial and operations reporting rules; the preparation and publication of financial and operations statistics from reported data; and enforcement of observance by carriers of the Commission's rules for accounting, records preservation, and reporting.

PERSONNEL REQUIREMENTS

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Systems	3	2.9	3	2.7	3	3.1	.....	0.4
Compliance	14	11.8	14	11.5	14	12.8	.....	1.3
Statistics	2	1.7	1	1.5	1	1.8	.....	.3
Total	19	16.4	18	15.7	18	17.7	.....	2.0

This activity is important and necessary because effective rate regulation depends in substantial measure upon accurate, uniform, and informative accounting and reporting. Accounting regulations must be designed to serve not only the needs of the Commission but also those of State regulatory agencies and of the carriers themselves. Adequate and timely reports are required to provide a continuing flow of data on current operations of carriers. Accounting regulation, to insure its effectiveness, requires the policing of the accounting and reporting actually being performed by carriers in order that there may be assurance that the prescribed requirements are being observed. In addition, continuous research is necessary as an aid to keeping accounting and reporting requirements in step with the constant changes in the expanding communications industry.

There are approximately 50 domestic telephone carries with annual revenues of $1 million or more subject to the Commission's accounting rules. There is a limited amount of continuous review of the accounts of the overseas communications carriers.

The Commission faces a challenging situation in exercising its authority over the Communications Satellite Corp. The accounting of Comsat is fully as involved and difficult as any other aspect of the satellite regulatory field.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

During the past year our systems of accounts were amended to remove references to plant types and items no longer in use or of such diminishing significance as no longer worthy of specific mention. The systems at the same time were modernized by adding references to new matters now significant.

The accounts of Communications Satellite Corp. were brought to a conventional basic of profit and loss reporting.

In fiscal year 1968 we plan to review the rules governing accounting for employee benefits with the idea of incorporating into our rules the acceptable recommendations of the American Institute of Certified Public Accountants for accounting for pensions throughout the commercial world.

The matter of computing interest costs for accounting purposes when borrow-

ing is done with debt securities carrying with them options to purchase equity securities may become one demanding Commission action in the next year or two.

There is an increasing amount of joint ownership of utility plant in the communications industry. We expect to consider the most efficient and economical approaches to accounting for such jointly owned plant. We will coordinate our studies with industry and electric utility regulatory bodies, both directly and through our participation in the activities of the Committee on Accounts of the National Association of Railroad and Utilities Commissioners.

The overseas record carriers are applying, on a test basis, a plan which has been devised for uniform allocation of investment, operating costs, and revenues among the several communication services offered. When this plan is perfected we expect to incorporate it into our prescribed accounting rules.

Increase requested: 2.0 A.E.

The increase requested is a nominal one. It is anticipated that the A.T. & T. rate hearing will point to areas where limited-scope, spot accounting studies should be made. The increase would give us a minimum amount of added flexibility to make such accounting investigations.

5. *International and satellite communications.*—This activity relates to the regulation (licensing, ratemaking, etc.) of all common carrier communication services, by all telecommunication media between the United States and overseas points (both foreign and interstate). It also includes regulation, including policy formulation, with regard to satellite communications within the contemminous United States. The allocated manpower requirements for Commission hearings related to this activity are included herein.

PERSONNEL REQUIREMENTS

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Rate regulation	18	14.3	20	14.4	20	15.5	.....	1.1
Service regulation	24	17.0	26	17.3	26	18.4	.....	1.1
International affairs	1	1.0	2	1.0	2	1.1	.....	.1
Total	43	32.3	48	32.7	48	35.0	.....	2.3

Efficient, adequate, and economical telecommunications between the United States and overseas points are an integral factor in the maintenance and improvement of commercial, social, and diplomatic relations, as well as in the support of defense activities of the United States. Commercial and social relations with overseas points is almost entirely dependent, and diplomatic and defense communications activities heavily rely on commercial common carrier communications. Their importance is emphasized by the recent formation of a Presidential committee to consider international and satellite communications.

Overseas commercial telecommunication services have been increasingly characterized by a tremendous growth in demand and radical changes in technology; that is, satellite communications, which are posing novel regulatory problems. It is essential that the Commission be in a position to promptly and effectively formulate and implement carefully considered policies and actions to intelligently guide developments most conducive to the public interest.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

The U.S. international carriers which provide services to the U.S. Government and to the general public have, through measures taken by the Commission, significantly reduced rates for service between the United States and overseas points. This has been made possible by establishment of composite rates for satellite and cable facilities which take into account lower costs for satellite facilities. It is expected that, within the near future, further substantial reductions will be made for communication service.

The carriers are, at the same time, continuing work under Commission aegis, on studies designed to show costs of specific services, so that more detailed analysis can be made of rate levels and structures.

The Commission presently has rates of the Communication Satellite Corp. under formal investigation, and will similarly investigate rates of other carriers should such action be necessary.

The Commission adopted a revised interim policy for the ownership and operation of earth terminal stations. The policy provides that Comsat and other international carriers will jointly own and operate U.S. earth terminal stations in agreed percentages.

The Commission resolved the controversy relating to applications filed to provide service between the United States, and Puerto Rico and beyond by alternative facilities. Applications were filed to establish an earth terminal station in Puerto Rico and an application was filed for the laying of a transistorized cable between the United States and Virgin Islands. The Commission authorized construction of an earth terminal station under its revised policy and authorized the laying of the transistorized cable. The authorizations were conditioned in such manner as to promote the orderly use of both facilities.

An application was processed and granted for the laying of a cable between the Virgin Islands and the Dominican Republic.

It is anticipated that legislation may be introduced in Congress during fiscal year 1968 providing for merger of U.S. international carriers and that such legislation would require that a requisite for such merger would be a finding by the Commission after hearings that such merger is in the public interest. Such a proceeding undoubtedly would be a complex one, requiring the attention of a number of staff members.

Increase requested: 2.3 A.E.

Additional legal and engineering staff are essential to meet the requirements of policy and other decisions in rates and facility regulation and to meet the need for necessary work in preparation for the review and renegotiation of the interim international agreements for the global satellite system which will take place in calendar 1969. The Commission is required to insure competition in procurement of additional satellite facilities and to insure that small business concerns have an opportunity to participate in such procurement. These increased procurement actions will require employment of additional manpower.

Generally, as indicated above, the public interest in an efficient and modern communication system will require, in view of the sharply increased activity in the field and major decisions facing the Commission, augmented staff capable of handling the workload in an expeditious and intelligent manner. While more efficient use of presently authorized personnel will assist in this, a conservative increase in staff, as requested, will still be necessary to fulfill program objectives.

In the international and satellite fields, dynamic advancements continue to be made in both submarine cable and satellite technology, and in the public and Government demands for new and expanded services. One of the most significant policy areas which must be resolved in the near future relates to the appropriate mix of cable, satellite, and other facilities.

There is every indication that the competitive struggle between cable, radio, and satellite will continue to intensify. If the public is to be assured the availability of an international telecommunications system which makes the most efficient and economic utilization of each of these modes, we must make comprehensive analysis and determination on a long-range basis of the technological, economic, and operational constraints and consideration that should govern our licensing actions. Licensing policy should be fashioned accordingly so that the public interest in efficient and economical communications services and the policies and objectives of the Satellite Act and Communications Act may be fully realized. Any such policy should then be continually reexamined and revised in light of new technological developments.

Policy formulations are also required with respect to the use of satellite communications in the handling of traffic (television and other) between points on the mainland United States. The Commission has instituted an inquiry into the matter, and a policy announcement by the Commission must be drafted.

GROWTH OF TELEPHONE INDUSTRY

Mr. EVINS. The total revenue of the communications industry has gone up from about $7 billion in 1957 to, 11 years later, $16 billion. Estimated for 1969, $17,785 million. That is a big industry. The number of telephones has gone up from 63 million to 114.5 million.

The growth that has taken place is phenomenal. The staff has gone up 38 percent.

It is a great industry and they spent a lot of money on research. If the railroads and others would follow the research pattern of the telephone industry, they would make strides and advances. I commend the telephone industry for their advances.

Mr. HYDE. Chairman Evins, as you may know, in 1953 there were ceremonies at the White House when they put the 50 millionth telephone on General Eisenhower's desk. It was only 13 years later, last fall, when a similar ceremony was held to put the 100 millionth telephone on President Johnson's desk. The rate of growth has been tremendous.

SIGNIFICANT ACCOMPLISHMENTS

Mr. EVINS. You list some of your significant accomplishments here in 1967 and in 1968. Hearings will be held to resolve major problems of interstate and intrastate facilities and the proper rate relationship between the practical classes of Bell System service.

I believe you said one of your investigations has been underway since 1960 and has been completed?

Mr. HYDE. Right.

Mr. EVINS. Was that in 1965?

Mr. HYDE. That was 1965; the beginning date. Actually, that is when the notice went out.

SEPARATE CORPORATIONS

Mr. EVINS. They are now forming separate corporations.

Did the Commission take judicial notice of that?

Mr. HYDE. We have. I do not believe that is as a result of our investigation.

Mr. EVINS. What is the purpose of breaking up?

Mr. HYDE. I believe it is because business got so large in those areas they needed a division for management purposes.

Mr. STRASSBURG. Southern Bell developed something in size over a 10-year period. For management purposes, they are breaking up in two separate companies. It won't affect jurisdiction, rate structure, or anything.

RATE REDUCTION

Mr. EVINS. Rate reduction amounted to $120 million a year.

Mr. HYDE. Yes, sir.

Mr. EVINS. Has that been decreased?

Mr. HYDE. The new rates are in effect.

Mr. STRASSBURG. $20 million.

Mr. HYDE. A substantial part are in effect.

Our reductions in an indirect sense were greater than that. We also absorbed some additional revenue requirements from intrastate.

Mr. EVINS. Increased attention to the domestic telegraph rate regulation is required because of the companies.

Is A.T. & T. interested in this new field?

TWX SERVICE

Mr. HYDE. A.T. & T. does have a TWX service. Western Union, as you probably know, has hopes and in fact has discussed the possibility of acquiring this record service from them with the thought of developing a comprehensive national TWX system. The two companies are discussing such a possibility.

Mr. EVINS. You do not consider this too serious, Mr. Chairman, when you recommend only 0.5 of 1 man-year increase?

Mr. HYDE. Yes, this is important but we are constrained all through here in our requests. One thing before we leave the common carrier business is this study of the relationship between computers and communications. This is a highly significant undertaking. I would be glad to leave you a copy of our notice on that because it is one of the more significant undertakings in the communications field.

MESSAGE SERVICE

Mr. EVINS. The Commission granted 300 applications filed by Western Union to reduce the hours of service, and authorized the company to discontinue 200 telegraph agency offices.

How does the message get through?

Mr. HYDE. The telegraph company makes arrangements for telephone agencies for delivering them by telephone. They consolidate offices.

Mr. EVINS. I hope the Commission will insist on service rather than——

Mr. HYDE. We do have a continuing surveillance on their efficiency of service.

Mr. COX. Where these offices are closed, a showing is made that through substitute service from a nearby office—with added personnel there—they still hope to maintain their standard of delivery within 70 minutes.

UNIFORM ACCOUNTING

Mr. EVINS. You want to increase from 15 to 17 jobs in accounting. This activity is important because effective rate regulation depends on accurate uniform accounting and reporting. Accounting regulations must be designed to serve not only the needs of the Commission but also the State regulatory agencies.

Mr. HYDE. The Commission has been given the responsibility for prescribing accounting rules, used for both jurisdictions.

Mr. EVINS. Are you approaching uniform accounting?

Mr. HYDE. We do have uniform accounting rules now, but we have to modify them.

Mr. EVINS. You say there are approximately 50 domestic telephone companies. This is on page 52. That is with annual revenues of $1 million or more, subject to the Commission's accounting.

Mr. HYDE. In that classification, yes. That is with revenues of that size.

Mr. EVINS. Are they all subject to the Commission's accounting rules?

Mr. HYDE. Yes, sir.

Mr. EVINS. What does a small business company do subject to the Commission's jurisdiction; they are subject to State regulation, are they not?

Mr. HYDE. They are.

Mr. EVINS. If they go across State lines, say from Kentucky to Tennessee, do they have to file forms with the Federal Communications Commission?

Mr. HYDE. We have certain allowances for the smaller companies.

Mr. STRASSBURG. If they do it over their own facilities. If they have their own facilities which cross State lines, they then would be fully subject to the Commission's regulations. Most companies, most of the small companies engaged in interstate service only through physical connection with another company, and as such they are subject to very few requirements of the Federal jurisdiction.

Mr. EVINS. Is there any jurisdiction over the telephone cooperatives now that they are getting larger?

Mr. HYDE. I believe it would be exactly the same as regards the others.

Mr. STRASSBURG. That is right.

Mr. HYDE. Other independents.

SATELLITE COMMUNICATION

Mr. EVINS. A significant accomplishment in 1967 was the conventional reporting of the Communication Satellite Corp.

Mr. HYDE. The Commission had a number of competing applications for earth stations, for cable licenses in the Southeast. We have had problems with respect to their systems of accounts but I would say the outstanding regulatory accomplishments would be the resolution of the policy with respect to ownership of earth stations, the development of appropriate conditions for the construction of the Caribbean cable.

FIFTH TRANSATLANTIC CABLE

Mr. EVINS. The Commission recently announced the proposal for an additional trans-Atlantic cable.

Mr. HYDE. What happened in this case—it is the fifth one, Mr. Chairman—TAT 5 it is called. What the Commission has done is after a study in concert with the State Department, Defense Department——

Mr. EVINS. Did the Satellite Corporation want this additional transatlantic cable?

Mr. HYDE. No. At least there were informal protests against it. I may say that as soon as we learned that negotiations were being undertaken by the carriers with European correspondents, we convened conferences at our place, invited representatives of State, Director of Telecommunications management, to confer with us. We later had conferences with the telephone company and COMSAT about it. There has been a continuing study of this matter. The meetings between the American carriers and the foreign carriers were deferred once. On the other occasions they met without signing papers. But now as a result of these studies, the Commission has issued a notice which says

in substance we will entertain an application for cable-handling licenses subject to some very specific conditions.

These conditions are designed to prevent the development or the construction of this new cable from being a deterrent to the further prosecution of our effort to develop a global satellite system.

There are many relevant considerations.

Mr. EVINS. The press says the FCC indicated yesterday that it look would favor on a bid to run a fifth cable across the Atlantic to Europe despite the objections of the Satellite Corporation.

The FCC also notified A.T. & T. and others that they must meet these conditions. A cable in service by the first quarter of 1970. Agreements by the participants to cut user rates by 25 percent.

Agreement that the cable and satellite system would each approach capacity utilization.

You put some standards in there?

Mr. HYDE. Yes, sir. A principal one is this: There must be a division of the traffic to complete the fill on an even basis. What I mean is, the 720-circuit cable would get the same percentage of fill as would a 5,000 capacity INTELSET for the satellite system. As you can see by those ratios, this is certainly not incompatible with the development of the satellite system. I might say that we also have to take into consideration in this connection the foreign relations implications, interest of the foreign administrations which will be participating in having the diversity of cable and satellite. European interests that are involved in this project have a very substantial influence in INTELSET.

Mr. EVINS. The Commission will determine the mix, percentage, and the amount?

Mr. HYDE. That is right.

Mr. EVINS. Between the various competing methods of communication?

Mr. HYDE. Yes. We pretty well indicated what it would be.

Mr. EVINS. Very well.

NOTICE ON TRANSATLANTIC CABLE

Mr. HYDE. I have the full notice which the Commission issued in this.

Mr. EVINS. Place the notice in the record for accuracy.

Mr. HYDE. Right.

(The notice follows:)

COMMISSION WILL ENTERTAIN APPLICATIONS FOR FIFTH TRANSATLANTIC TELEPHONE CABLE

The Commission today advised A.T. & T. and the interested international telegraph carriers by letter that it would be appropriate for them to apply for authorization for a 720 circuit, transistorized cable between United States and Spain (TAT 5) provided certain conditions are met. At the same time, the Commission advised Comsat that it expected that company to continue to press forward promptly with plans to install and operate a global system with large-capacity, high-quality satellites to effectuate the goals of the Communications Satellite Act and the Interim International Agreements entered into between United States and some 60 foreign nations.

The applications for the cable authorizations must satisfy the following conditions:

(a) Assurances that the cable would be in service by the first quarter of 1970.

(b) Conclusion of agreements for reduction of at least 25 percent in rates between United States and countries using TAT 5.

(c) Conclusion of arrangements for proportionate fill of the cable and satellites on a schedule which would assure that each of these facilities would reach a 100 percent fill at approximately the same time.

In its letter to Comsat, the Commission advised that company that its statement with respect to TAT 5 did not indicate that any particular ratio of cable facilities to satellite facilities should be maintained in the future. Instead, it was based entirely upon an analysis of current circumstances. Any future proposals for additional cable facilities would be considered on their own merits in the light of then existing conditions.

The TAT 5 proposal involves a cable to be laid between Rhode Island and southern Spain and which, with appropriate microwave and other cable connections, would provide direct service to Portugal, England, Italy, and other European points reached through these countries. The cable will be a modern transistorized one of the type authorized between the continent of United States and Puerto Rico. The economies inherent in this cable will make possible the rate reductions set forth above which A.T. & T. indicated it expected to negotiate with its foreign correspondents. At the same time, to meet the burgeoning demand for conventional facilities, as well as intercontinental television and in the data field, Comsat and its partners in the international consortium will proceed with plans to construct very high capacity satellites which are expected to go into service early in the seventys. In order to insure appropriate use of each of these media the Commission included the requirements for proportionate fill in its letter to A.T. & T.

Before adopting the letters, the Commission considered voluminous data from A.T. & T., the international carriers and Comsat regarding projected traffic volumes, existing and proposed facilities designed to meet requirements, the time when the facilities could reasonably be expected to be available, costs, revenue requirements and potential for rate reductions, the views of other agencies of Government and those of interested foreign entities insofar as they were available. The Commission was of the opinion that its action was fully consistent with the expressed goals of the United States for the creation of a global satellite communications system as expeditiously as possible and urged Comsat to continue its current program looking toward the establishment of advanced systems to implement the goal of global service via satellite as promptly as possible.

The Commission stressed that it has reached no final decision on this matter and could not appropriately do so until there has been consideration of the application itself and any developments subsequent to its filing, particularly with respect to the earliest possible establishment of the global commercial communications satellite system.

Actions by the Commissions, by letters, February 16, 1968. Commissioners Hyde (Chairman), Bartley, Lee, Cox, Loevinger, Wadworth with Commissioner Johnson dissenting and issuing a statement.

Safety and Special Radio Services

Mr. Evins. Safety and special radio services.

There is a lot of interest in this, licensing, safety, and special radio services.

You want an additional increase in personnel from 168 to 170. You state that prior to World War II there were some radio operators of this nature by ship at sea and some police departments. Now there are 800,000 stations licensed in the safety and special radio services.

There is a chart on page 58 which shows the increase there. Licensed stations goes up 124 percent and you only have a 6-percent increase in personnel.

How does the Commission regulate a local police or fire department; you grant them the facility and the right to use their equipment.

Mr. Hyde. That is right.

Mr. Evins. But once they have gotten it, you do not do much with respect to regulating it, do you?

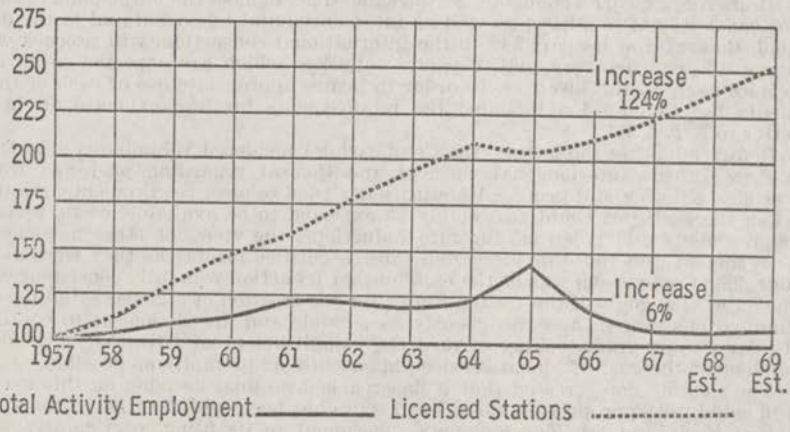
Mr. HYDE. No, we do not. There are certain rules. This is a specialized service. Actually there is no real problem of discipline. It has been a long, long time since we had one. I do remember one instance in which as a hearing examiner I conducted a hearing on a renewal application of a police department station.

Mr. EVINS. You break this down for aviation service: 0.5 man-year increase, and for marine service there is a small increase. For public safety service there is an increase. For industrial service there is an increase. Land transportation service, there is an average employment increase. You do not do much work there, do you, Mr. Chairman?

Mr. HYDE. You know, I am getting overwhelmed as you read and describe them to me.

Mr. EVINS. We will place this chart on page 58 in the record.

(The chart follows:)



Mr. EVINS. You say, "the Commission's workload in these services increases with the number of stations to be regulated. The number of licensed stations has increased at a far more rapid rate over the past 10 years than our employment levels." The Chairman is overwhelmed with work in this area?

Mr. HYDE. I have not given up.

Mr. EVINS. Some of the most urgent proposed new uses would extend radio for highway safety purposes and to more aggressively combat crime in the urban areas. You have updated your script there.

I hope that you can accomplish safety on the highways and combat crime in the streets. We all agree with you. We are all for you and commend you.

UHF BAND FOR LAND MOBILE SERVICES

Mr. GIAIMO. On this point on this page, the third paragraph there, you say in the land mobile area investigations were started to determine feasibility of determining frequencies by sharing UHF and VHF frequencies by reallocating. That is what we were talking about earlier. Then you go on to tell about your progress in the channels splitting and 450 to 47 megacycle range. Let me preface that by saying, going back to last year's hearings, you will recall we had a lengthy discussion on this problem and the mandate of the Congress in that

area is rather clear as evidenced by the Select Small Business Committee, which Chairman Evins also chairs, where they said they wanted to take some immediate action in this spectrum allocation.

Can you tell us now what you are doing specifically in the UHF spectrum area, the lower portion of it particularly, the portion from 14 to 20, which the land mobile people tell us is the desirable area to do some work in. As I understand it, the costs could be rather prohibitive if you went into the higher portions of the UHF spectrum? What are you doing in this lower portion?

Mr. HYDE. We have undertaken very extensive studies of how best to accomplish a sharing arrangement. I think that you will agree that undertaking such a program, we should do it with minimal costs to broadcast services and minimal dislocation to any public use. We have three courses which have been studied pretty substantially. We are not certain at the moment which one or which combination of them would best accomplish our purpose. In doing this we have studied possible rearrangements of UHF stations, and the possibility of simply taking advantage of the absence of stations in certain areas. We have to give consideration to the manufacturing problems that would be generated if we used frequencies in different ranges in different metropolitan centers. I can tell you that the resolution to go ahead and provide for increased use of the UHF band has been made. We are not procrastinating about whether we should or not. We are undertaking to study how best to do that, having in mind the problems of the manufacturer, the chracteristics of the frequencies, the problem of accommodating such stations as are on the air, and such stations as are applied for in specific applications.

I assure you that this is not just a delaying tactic. It does represent a serious effort to handle this problem in the most orderly and advantageous way.

Mr. GIAIMO. I understand that. You understand our concern or my concern and the concern of many members; that we have been hearing this now for year after year and we have to be able to report to many of our colleagues who ask. What progress has been made since last year? Last year I think it was on page 1193.

At that time you indicated to us that you would have some word for us as to the possibility of some reallocation of the lower portion of the UHF band.

Mr. HYDE. I must tell you that I was more optimistic at the time I was here as to how much time it would take.

Mr. GIAIMO. Fine.

Mr. HYDE. I was ready then to recognize that we must make some additional provision for mobile services. I was ready to recognize then that perhaps the most promising area would be in the UHF allocation. There is a vast amount of spectrum space involved there.

Mr. GIAIMO. What happened last year to lessen your optimism?

Mr. HYDE. I have found as I get involved in this with the help of the engineers and the economists, that it is easier to make a promise such as I made to you here than to carry it to fruition. I do represent to you that we have followed through on this conscientiously and we have made good progress. We do believe that the provision that we have made for increased mobile services in the channel-splitting technique

will give us a little latitude in time to pursue these other methods. They are underway.

Mr. GIAIMO. It is not just this committee that is concerned about this.

Mr. HYDE. I understand Mr. Dingell is going to inquire into that.

Mr. GIAIMO. I must say it seems like we are going backward. I felt better last year than I do today as far as finding some solution.

Mr. HYDE. No. I promise you that we will undertake it. We have undertaken it, but unfortunately have not been able to get out a definitive rule. The nature of the study and the complications of it have made it impossible to have the answer this early.

REARRANGEMENT OF UHF CHANNELS

Mr. GIAIMO. You mentioned earlier that one of the phases of this that you were studying was the rearrangement of UHF channels.

Mr. HYDE. That is right.

Mr. GIAIMO. You mentioned the absence of certain stations. Have you given any thought to any type of a freeze where these stations are not actually being used or where there is an absence of allocation?

Mr. HYDE. I believe that we are going to be able to proceed with rulemaking before there could be any serious change in the present allocation. I think a freeze would not be necessary.

SHARED FREQUENCIES

Mr. EVINS. Mr. Chairman, how do you go about this, on a first-come-first-served basis?

Mr. HYDE. In the granting of these licenses?

Mr. EVINS. In the granting of these new land mobile grants, frequencies, licensing of additional stations. Is it ordinarily on the basis of the time the application is filed?

Mr. HYDE. Yes, sir. But let me hasten to add that they are not mutually exclusive. You do not have the same problem in most services that you have with broadcast stations where one gets a grant and the other is out. In a typical case these are shared uses and in many instances the uses are coordinated.

Mr. GIAIMO. The problem is not conflict between the users of the land mobile type frequencies, but the conflict is to try and get them some more of this space which we claim should be taken from the lower portion of the UHF?

Mr. HYDE. The major problem at this time is to find some additional space; that is right.

Mr. COX. The problem in the public safety area, where essentially the grants are exclusive in a limited area, is interference in adjacent areas. That is, if you are licensing a channel to a police department in Burbank, Calif., no one else in that area can use that frequency, but they may get interference from someone down toward San Diego.

In the business, manufacturing, and special industrial services, they are not exclusive. As the Chairman said, the problem there is that once you have licensed 65, 75, or so users on a channel, depending on the number of mobiles they have in their fleet, you get to a point where the efficiency of the use is impaired. Then you either are going to have to

come up with additional spectrum eventually or—and this is being urged by some other interests—you may have to revise your eligibility requirements to set some priorities as to the kind of businesses that ought to be allowed to use radio. Thus far we have been using very broad priorities. If you cannot qualify for one of the tighter user groups, you will end up, certainly, either in the business radio service or ultimately in the citizens band.

Up to this point, we have been following a policy that anybody who has the requirement to reach a vehicle by radio could get some sort of a license to do so. Some of these frequencies are very badly crowded.

Mr. GIAIMO. I know they are. That is why I am constantly talking about this problem. I hope that you are not suggesting that you are going to restrict or narrow it.

Mr. Cox. We have not proposed anything of this sort. I am simply reporting that the broadcasters, for instance, when the discussion gets around to actually taking frequencies from the UHF allocation. they raise questions as to whether we can soundly go ahead in perpetuity licensing mobile radio to everyone who comes along, regardless of the degree of their need.

Mr. GIAIMO. I understand that.

Mr. Cox. We have proposed no restrictions.

Mr. GIAIMO. My concern is that we are dealing with a substantial contribution to America's economy here. We are not talking peanuts. We are talking, as I understand it, in excess of $20 billion, if the figures used last year were correct. Something has got to give. This uses up less than 5 percent of the entire spectrum allocation.

Mr. Cox. One of the alternatives that the chairman referred to that we are studying very seriously would be a sharing of the UHF spectrum by land mobile users. This is what he referred to as the absence of assignments. If in Chicago, or Los Angeles, or New York, wherever a need exists, particular UHF channels are not in use either in those communities or immediately nearby, then we have some reason to believe that you could fit in very substantial land mobile operations on those channels without interfering with their long-range use in the television service, if and when a need for licensing projected stations arises.

Mr. GIAIMO. That would be the case in a State like Connecticut or New York. I have a map here which shows channel 14 out of Boston which is the only UHF, as I understand it, licensed in channel 14 in that area. This entire Connecticut and part of New York area would be available if it were——

Mr. Cox. One of the committees that was working on this had considered this sort of thing expressly, and they submitted to us some maps very much like this one you have there, showing that they had developed certain distance factors. They were satisfied that you could allocate a land mobile channel up to certain contours drawn around the existing station allocations. There are, in every one of the top 25 markets where this problem substantially exists, openings where you could fit in land mobile operations on these shared channels.

OPPOSITION TO SHARING LOWER BAND OF UHF

Mr. GIAIMO. One of the complaints that you hear from many people, and I would like to hear your comments on this, is that there is a great deal of opposition to this taking some of the lower band of the UHF spectrum. Is there opposition from the broadcasters?

Mr. HYDE. There is opposition to it. Before the Commission will make any changes in allocations, it will have to give public notice and it will have to give opportunity for comment by anyone who is interested in the decision to be made. Of course, before we can invite comment we have to design a plan of approach that can give scope and direction to the comment. That is the stage that we are in now. I think that if you will just bear with us a little while longer we will have a public proceeding going.

Mr. EVINS. The Commission sets it out very well here. Let me read this.

Without adequate regulation the legitimate users of radio communications, be it public safety as in marine, aviation, police and fire; business and industrial as in trucking, railroads, taxi cabs or commercial enterprises; broadcasting as in radio and television, all will become vulnerable and be plagued by increasing communications interference which will progress with inevitable certainty from noticeable to annoying to destructive. This leaves the question, "Should entrepreneurs who use radio communications in furtherance of business ventures which directly reflect in the gross national product, or John Q. Citizen who depends on mass media communications such as radio and television for keeping abreast of world events as well as entertainment, be deprived of the service in which they have invested?

Mr. HYDE. Our task is to provide an appropriate division here. We shall do that in the public interest just as quickly as we can.

Mr. EVINS. In some cases you can give more band facilities and in others the public interest may be affected.

Mr. GIAIMO. I am in favor of what you are saying. It has been since 1947, since we have had change in spectrum allocation and we have been continuously hearing about the studies. We in Congress are most impatient to hear from you definitively.

Mr. HYDE. I am reporting tangible, real work.

FIELD ENGINEERING

Mr. EVINS. You are very vigorous.

Here is the increase in the number of transmitters and number of stations. The number of stations goes up from 377,000 to 1,920,000. You are asking that the staff be increased by eight more in the Bureau of Field Engineering. Then you state these figures do not include 49 positions which are included in a separate section of your 1969 budget for the Citizens Radio Service. Overall, Mr. Chairman, with the Citizens Radio Service and Field Engineering, how many new jobs are you requesting to clear up this congestion?

Mr. HYDE. I think that I had nine people aside from what has been asked for.

USE OF COMPUTER

Mr. EVINS. Mr. Chairman, what uses are you making of the computer?

Mr. HYDE. We are making tremendous use of that computer.

Mr. EVINS. How is it being used?

Mr. HYDE. It is being used effectively. As a matter of fact, let me give you a little statement on that. The computer has been in operation for 4 years. Its initial cost, including auxiliary equipment, was $992,800. At the present time we have 54 employees assigned to data processing.

Mr. EVINS. Operating the computers?

Mr. HYDE. Yes, sir. The computer processes 40,000 station and operator applications per month, prepares licenses on a high-speed printer, and maintains information on 1,380,000 licenses. These are some of the achievements through use of the computer. Elimination of application backlogs in the citizens, amateur, marine, and aviation services.

Mr. EVINS. Mr. Chairman, if you want to, put that list in the record.

Mr. HYDE. Let me do that. It is really impressive.

Mr. EVINS. Highlight a few of them there.

Mr. HYDE. All right. We have reduced the backlog in these services I mentioned from 90 days to approximately 21. That is, improved service.

Data on land mobile services, frequency assignments are on computer tape for ready access. Since you asked me to put in some of the more outstanding ones, in connection with our study of possible use of UHF channels for mobile purposes, we made some analyses which would have taken us 18 engineering man-years or $275,000 to complete. These have been done in just a matter of a few weeks. There are other areas where we expect we can make good use of the computer. We are exploring this as expeditiously as we can.

Mr. EVINS. It is a very highly technical field. The computer is a useful device?

Mr. HYDE. I do not believe that we could perform our task now without access to the computer.

COMPUTER SAVINGS AND PROGRESS

Mr. EVINS. This statement may be included at this point in the record.

(The statement follows:)

COMPUTER PROGRAM—SAVINGS AND PROGRESS

INTRODUCTION

The computer has been in operation in the Commission for 4 years. Its initial cost, including auxiliary equipment, was $992,800. At the present time we have 54 employees assigned to the data processing division operation with an annual payroll of $420,000. The computer processes 40,000 station and operator applications per month, prepares licenses on a high-speed printer, and maintains information on 1,380,000 licenses.

Significant achievements of the computer in improving Commission operations are as follows:

Elimination of applications backlogs in the citizens, amateur, marine, and aviation services; delays in issuing license have been reduced from 90 days and over to approximately 21 days;

Data on land mobile services frequency assignments are on computer tape for ready access;

Provision of additional service to the public in the marine and aviation services of notifying licensees in advance of the expiration date of their licenses. (This is a great help to the public, and it expedites the whole licensing renewal process.)

Provision of complete and up-to-date information on licensees to Commission field offices for use in monitoring, inspection and surveillance purposes;

Automatic selection of UHF television channel assignments; and

Provision of engineering computations for AM, FM, and VHF–TV services.

SAVINGS

Although it is difficult to assess precisely the savings achieved by the computer, estimates for those program areas cited above are as follows:

Annual saving of 45–50 man-years, or $250,000, in the application processing and licensee information system;

A saving of $100,000 in contractual computer services to make analyses of land mobile services frequency assignments:

A saving of 18 egineering man-years, or $275,000, in the development of a UHF television channel assignment plan, and an annual saving of $25,000 to maintain the plan; (see attached Broadcast Bureau statement)

An estimated annual saving of 6 man-years, or $75,000, in providing engineering computational products.

PROMISING AREAS FOR COMPUTERIZATION

Systems and programing development work are going on at the present time for adaptation of the computer to

An index/reporting system for Commission decisions, reports, et cetera;

An FM chanel selection and assignment plan;

Property record accounting; and

Commission payroll and associated financial reporting.

Other areas identified for study and possible mechanization are:

Land mobile frequency assignment plan;

The processing of land mobile services applications;

Maintenance of ledger accounts on a cost basis by object class and Commission program; and

Activity time and cost reporting system.

The tangible savings in manpower made possible by the computer are comparatively small when compared with the intangible benefits which cannot be measured directly in dollars. In early 1966, the Commission adopted a revised UHF television assignment plan. The revision was necessary to provide a fourfold increase in the number of TV channels allocated for educational TV broadcasting. Jamming this many additional allocation requirements in a TV allocation plan required a careful examination of each contemplated assignment so as to achieve the highest degree of efficiency in the use of each channel.

Maximum efficiency is approached in an allocation plan if each chosen assignment has the least impact on the pool of channels available for assignment in a given area. Thus, if there are 20 channels from which an assignment may be chosen in a given city, each must be tested to find the one that has the least impact on the pool of assignments not only in the city under study but also in all other cities in the area out to as much as 205 miles from the city under study. It is estimated that to develop such a plan by manual methods would require the full time of an expert TV allocations engineers for 18 years. Since the efficiency of an allocation plan is also influenced by the place in the United States where you start, if a dozen possible starting places were studied for comparison, this would have taken the engineer 12 x 18 years or a total of 216 years to complete. Naturally, no such effort was possible prior to the advent of the computer and allocation plans were created manually by simply assigning the first channel that would work in a given city. With the expertise developed over many years of working with allocation plans, some manually developed plans came within 10 percent of being as efficient as computer derived plans. This sounds close but the 10 percent of channels that were missed might mean the difference between having a needed channel in a particular city and no assignment at all. The computer in a matter of approximately 10 hours per plan, was able to develop and compare 12 possible UHF allocation plans in 120 hours which would have required 216 years by manual means.

In the matter of the continuing work of the Commission, additional TV channel assignments requested in petitions are selected by the computer in a matter of minutes whereas by manual means each would require from several hours to

several days of an expert engineer's time. This means that the Commission can act more expeditiously on petitions with the result that we have no "backlog" of petitions for new UHF channels. In addition, we are faced with the problem of creating a new educational FM channel assignment plan, again faced with the need for maximum efficiency. We expect to accomplish this by means of the computer within approximately 6 months. By manual means the adoption of the plan would be delayed 1 or 2 years or we would just try to live with the first plan developed without assurance as to its efficiency.

The Commission was recently faced with the problem of determining the impact of reallocating some of the UHF television channels to the land mobile services. A manual study of this impact would have taken several years and the results would have been inconclusive because of questionable efficiency of replacing the deleted channels. The computer was able to simulate the deletion of these channels and to select replacements in the most efficient manner in a matter of a few hours.

JUSTIFICATION MATERIAL

Mr. EVINS. Let us put in pages 66 through 69.
(The pages follow:)

V. FIELD ENGINEERING ACTIVITY

The field engineering activity provides services and assistance to the general public, Government agencies, and industry. Among its responsibilities are the enforcement of laws and regulations, the resolution of radio interference, the examination and licensing of radio operators, the processing of applications pertaining to painting, marking, and placement of antenna structures, and furnishing direction-finding aid in connection with ships and aircraft in distress.

FINANCIAL REQUIREMENTS

	1967 actual	1968 estimate	1969 estimate	Increase
Personnel compensation	$3,533,146	$3,691,124	$3,909,899	$218,775
Personnel benefits	256,035	269,524	282,347	12,823
Other obligations	719,029	718,398	757,820	39,422
Total	4,508,210	4,679,046	4,950,066	271,020

PERSONNEL BY ACTIVITY[1]

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
1. Monitoring	154	146.8	155	145.8	155	145.8	0	0
2. Inspections	95	91.5	99	91.1	99	95.1	4	4.0
3. Investigations	81	76.6	80	73.3	80	76.6	4	3.3
4. Application processing	55	50.2	54	50.2	54	50.2	0	0
Total	385	365.1	388	360.4	388	367.7	8	7.3

PERSONNEL BY ORGANIZATION[1]

Field Engineering Bureau	384	363.3	386	358.6	386	365.9	8	7.3
Data Processing Division	1	1.8	2	1.8	2	1.8	0	0
Total	385	365.1	388	360.4	388	367.7	8	7.3

[1] These figures do not include 49 positions (46 man-years) which are included in a separate portion of the 1969 budget request dealing with the Citizens Radio Service.

The Field Engineering Bureau provides an enforcement service which protects the multibillion-dollar public investment in radio communications. This investment consists not only of the vast quantities of equipment and facilities devoted to communications but includes, as well, the infinite value of the scarce

radio frequency spectrum. The latter will lose its value if frequencies allocated within its boundaries cannot be effectively used because of congestion and disruptive radio interference. This situation is in fact occurring and we know that the value of many frequencies assigned for public safety, health, local governments, and industrial usages is being diluted by increasing congestion in the spectrum generated in large measure by improper operations. The more the radio spectrum is used, the more important is the rigid observance of Commission rules and regulations. Otherwise, spectrum pollution will occur producing unnecessary waste of this vital national resource. Rules and regulations are meaningful only when they are followed. In order to obtain acceptable levels of conformance to its rules, the Commission has maintained an enforcement function in the Field Engineering Bureau.

Without adequate regulation the legitimate users of radio communications, be it public safety as in marine, aviation, police, and fire; business and industrial as in trucking, railroads, taxicabs, or commercial enterprises; broadcasting as in radio and television, all will become vulnerable and be plagued by increasing communications interference which will progress with inevitable certainty from noticeable to annoying to destructive. This leaves the question, "Should entrepreneurs who use radio communications in furtherance of business ventures which directly reflect in the gross national product, or John Q. Citizen who depends on mass media communications such as radio and television for keeping abreast of world events as well as entertainment, be deprived of the service in which they have invested?

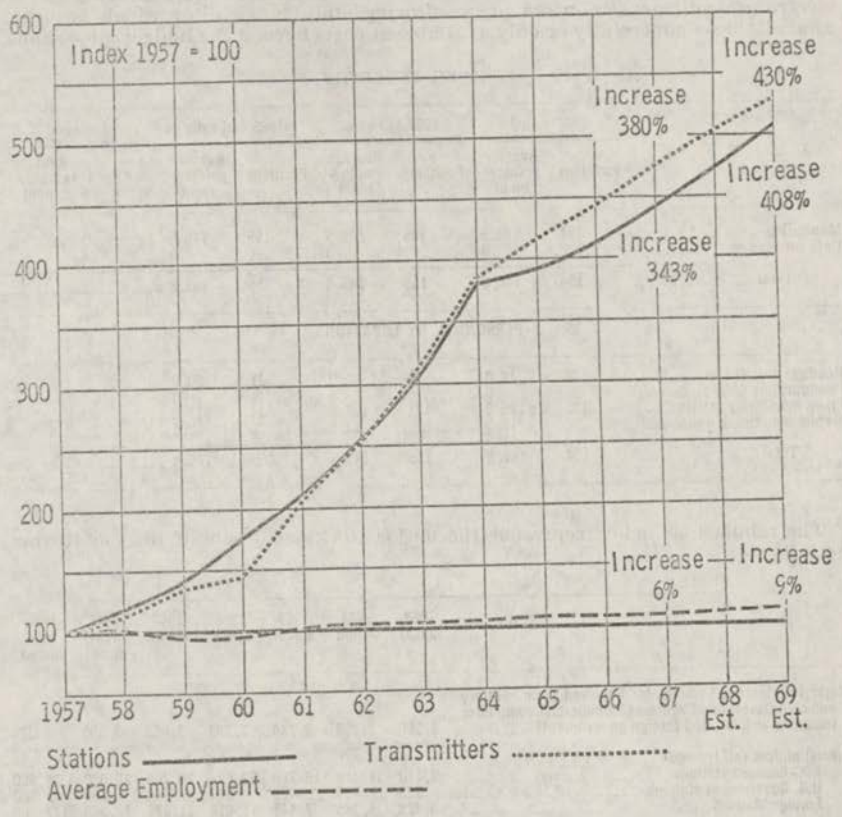
Adequate enforcement of the usage of the radio spectrum is directly proportional to adequate manpower. Enforcement is a hard, unglamorous, oftentimes thankless task which can be accomplished only through the continuing diligent application of manpower in sufficient quantity to produce the desired control in the areas concerned.

The following presentation by the Field Engineering Bureau, based on manpower, experience, and statistics, depicts the manpower necessary as a start, to provide the user public with service for which it has paid and to which it is entitled.

Since the workload of the Field Engineering Bureau is directly related to the number of authorized stations and transmitters, the following table is provided to show the growth in both the number of stations and transmitters as compared with the staff of the Field Engineering Bureau.

Fiscal year	Number of stations	Number of transmitters	Average employment
1957	377,838	1,273,498	377.0
1958	446,888	1,407,264	390.0
1959	517,291	1,728,947	347.5
1960	663,172	1,818,029	360.2
1961	784,350	2,663,475	380.4
1962	951,990	3,225,782	385.6
1963	1,154,338	3,983,446	384.4
1964	1,444,400	4,948,063	394.9
1965	1,485,470	5,304,699	406.1
1966	1,563,746	5,646,320	396.3
1967	1,673,743	6,087,266	399.3
1968 (estimate)	1,800,000	6,400,000	405.0
1969 (estimate)	1,920,000	6,750,000	412.0

The following chart portrays graphically how much more rapidly the number of stations and transmitters has increased than the staff of the Field Engineering Bureau which has responsibility for the field enforcement activities of the Commission.



Note: The absolute figures on which this chart is based are shown on the preceding page.

MONITORING

Mr. EVINS. We have a section here on monitoring.
Place pages 70 through 74 in the record.
(The pages follow:)

1. Monitoring

The radio monitoring function requires observations and measurements of radio and other electromagnetic emission to detect and correct violations of laws, regulations, and treaties, and thus provide a vital part of overall regulation of the communications industry. Unauthorized radio stations and sources of interference including radiations from industrial, scientific and medical noncommunications equipment, are located by direction-finding processes. Direction-finding aid is given to distressed planes and ships in the national search and rescue program.

Since violations, radio interference, and distress cases exist or arise at all hours and on weekdays, weekends, and holidays alike, the monitoring function is a never-ending, 24-hour requirement if the public is to be served effectively.

Frequency usage and operating data are collected to aid the Commission in allocations and other regulatory functions. Engineering studies and programs furnish special information, such as propagation characteristics of different frequencies, needed for allocation and regulation. These engineering programs also pertain to design, construction, installation, and maintenance of special electronic equipment required by monitoring stations, some of which is either unavailable commercially or only available at costs beyond the budget allocations.

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Monitoring	154	146.5	155	145.5	155	145.5		
Data processing		.3		.3		.3		
Total	154	146.8	155	145.8	155	145.8		

PERSONNEL BY LOCATION

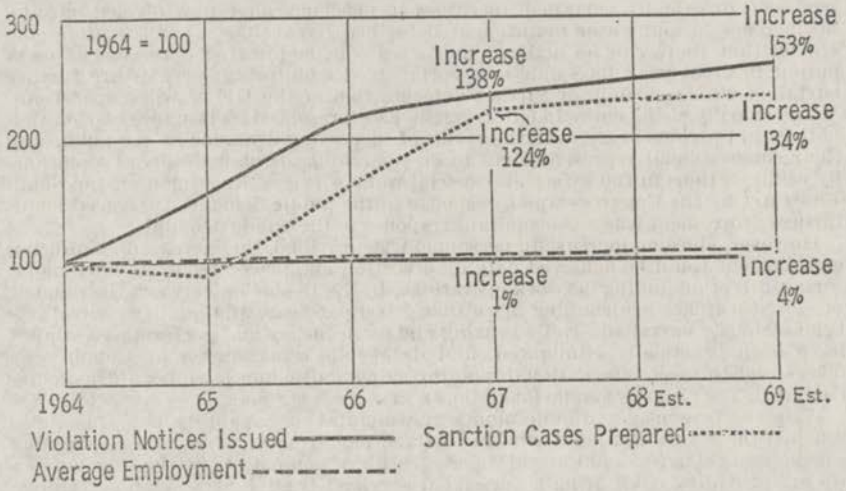
Headquarters (FEB)	19	19.0	21	20.0	21	20.0		
Headquarters (ADP)		.3		.3		.3		
Fixed monitoring stations	135	115.0	134	113.0	134	113.0		
Mobile monitoring units		12.5		12.5		12.5		
Total	154	146.8	155	145.8	155	145.8		

The tabulations below represent the major workload items of the monitoring activity:

	1963 actual	1964 actual	1965 actual	1966 actual	1967 actual	1968 estimated	1969 estimated
Major interference complaints: Received from military and civil Government agencies, commercial companies including airlines, and foreign governments	2,260	2,396	2,744	2,308	3,062	3,200	3,320
Official notices (all types):[1]							
FCC-licensed stations	9,110	11,410	16,760	23,623	26,700	28,000	28,900
U.S. Government stations	723	435	422	370	548	600	600
Foreign stations	5,429	5,385	7,448	11,012	11,926	12,350	112,700
Total	15,262	17,230	24,630	35,005	39,174	40,950	45,520
Cases monitored and developed:							
Coordinated network operation:							
Interference	2,372	2,685	3,009	2,912	2,824	2,900	3,000
Other than interference	283	277	1,014	697	684	700	800
Individual field stations:							
Interference	6,002	6,090	3,844	3,778	3,238	3,500	3,600
Other than interference	4,667	4,696	4,783	4,372	4,555	4,600	4,700
Total	13,324	13,748	12,650	11,759	11,301	11,700	12,100
Type of action:							
Monitoring net alerts	3,436	3,354	3,462	2,984	3,018	3,100	3,150
Signals identified and indexed	53,682	44,865	51,303	40,140	38,823	40,000	41,000
Long-range radio bearings:							
Case bearings	25,950	28,837	29,086	27,313	26,462	27,000	27,000
Search and rescue bearings	502	481	888	534	573	600	600
Total	26,452	29,318	29,974	27,847	27,035	27,600	27,600

[1] These figures include warning and supplementary notices in addition to notices of actual violations.

The following chart shows the relationship between average employment and work products (all services) as reflected in violation notices and sanction cases processed. Statistics shown begin with the first full year of Monitoring Systems Division operation. (The Monitoring Systems Division was established as a result of reorganization near the end of fiscal year 1963.)



The following figures reflect the statistics supporting the above chart. (Includes Citizens Radio Service.)

Fiscal year	Violation notices issued	Percent increase over base year 1964	Sanction cases processed	Percent increase over base year 1964	Average employment	Percent increase over base year 1964
1964	7,315		160		160.4	
1965	11,212	+53	235	−10	160.8	
1966	16,161	+121	424	+63	161.7	+1
1967	17,378	+138	585	+124	162.5	+1
1968 (estimated)	18,000	+146	600	+131	166.5	+4
1969 (estimated)	18,500	+153	610	+134	166.5	+4

Significant Accomplishments in Fiscal Year 1967 and Those Forecast for Fiscal Year 1968

Violation notices issued for on-the-air violations in all FCC-licensed radio services (excluding class D citizens) increased approximately 5½ percent during the past year over the previous year, from 11,690 to 12,370.

Unlicensed operation of radio transmitters is becoming a serious problem. In fiscal year 1967, monitoring operations found 2,294 stations operating without a license (excluding class D citizens). More than 93 percent of these unlicensed stations were found on frequency bands above 30 mc./s by mobile monitoring units in geographical areas beyond reception range of the fixed monitoring stations. If unlicensed operation of radio transmitters is permitted to go unchecked, it is the first step toward loss of governmental control and failure to meet regulatory responsibility. The next step is frequency jumping with its attendant flaunting of governmental frequency allocating authority. The inevitable result is that chaos spreads from one radio service to another and the public suffers. Moreover, these developments indicate inefficient and wasteful utilization of the spectrum. Com-

plaints from the user public of severe interference, wanton and otherwise, are becoming more bitter and more frequent.

License revocation warnings for repeated violation of the Rules increased during the past year over the previous year by 33 percent from 1,215 to 1,613 (class D citizens excluded).

All nonessential activities have been eliminated, quality control on the DF net has been drastically curtailed, increases in efficiency have now leveled off, and no increase in manpower is anticipated for fiscal year 1968. It is therefore concluded that there can be little or no increase in monitoring enforcement work output in fiscal year 1968 unless essential fixed monitoring services are further curtailed with concomitant further deterioration of the DF network operations.

The sharply rising curve in enforcement, as represented by issuance of violation notices in previous years, was the result of increasing demands by the public and their congressional representatives to do something about widespread violations by radio stations in the safety and special radio services. Enactment of the Small Fines Act by the Congress was a response to the public demand. Increased monitoring enforcement was a concomitant response to the public demand.

However, since no increase in personnel was provided, the increased monitoring enforcement could be achieved only by diverting manpower from the fixed-monitoring/direction-finding network operations. In the 18-station network the number of closed watches are running more than 3,000 per year, and quality control has been seriously curtailed—radio bearing and fix accuracy and performance studies have been practically eliminated, and data collection for use by Commission offices and to meet international monitoring commitments have been drastically curtailed. The Commission no longer has a first-class DF net.

With the presently available manpower, monitoring capability has practically reached the saturation point, and in the land mobile services (which is receiving considerable congressional attention as a result of complaints by the user public) we are providing monitoring enforcement service to only a very small percentage of the country. The explosive growth of the radio communications industry since World War II has simply run away from our enforcement capability.

Sanction cases are violation files which, after assembly and critical review in Washington, appear to warrant administrative or punitive sanctions against repetitive and/or willful violators. These cases are referred to the legal divisions of the Commission's service bureaus for legal action. It is again stressed that, although progress has been made during fiscal 1967, it was possible to produce referral cases on only about half of the potential cases. The other half were filed without action because of lack of manpower to perform the necessary processing and review functions.

Because of the necessity for continued economy, no increase in personnel is being entered for monitoring in this budget request for fiscal year 1969. Since we cannot now meet both the fixed monitoring/direction finding and mobile monitoring workloads with the present staff, we will not be able to meet any additional work requirements or increases in present workloads.

Mr. EVINS. Significant accomplishments in the field of monitoring. Monitoring operations found 2,294 stations operating without a license.

What is done to stop these types of operators?

Mr. HYDE. Notify them to get off the air.

Mr. EVINS. Mr. Plummer found 2,294 stations operating without a license.

Mr. HYDE. He puts them off the air.

Mr. EVINS. More than 93 percent of these unlicensed stations were found on frequency bands above 30 mgs by mobile monitoring units in geographical areas beyond reception range of the fixed monitoring stations. They were crowding the frequencies unlawfully.

Mr. HYDE. Yes, sir. This does point up the need for an effective enforcement arm because if it can be found that an operator can go undetected this invites more of the same.

Mr. EVINS. Violation notices issued for on-the-air violations in all radio licenses increased 5½ percent, from 11,690 to 12,370.

INSPECTIONS

Mr. EVINS. Place page 74 in the record, and pages 76 and 77.
(The pages follow:)

2. *Inspections*

The Commission requires that operation of radio stations by its licensees comply with particular rules of the Commission as well as international treaties and regulations. One part of the Bureau's enforcement program is to make such determination through the process of inspections. Inspections serve several purposes in that in addition to determining compliance with the rules and regulations, there are a number of occasions during which the inspecting engineer is of assistance to the licensee by answering questions dealing with the regulations governing the particular service. A third purpose served is that the inspecting engineer collects nontechnical and engineering data which is furnished to other bureaus and offices of the Commission to assist in rulemaking and spectrum management. An official notice of violation is issued to a licensee when violations are discovered. Proposed sanction actions are initiated by the Bureau, if violations are determined to have been willful or repetitive.

The multibillion-dollar telecommunications industry is based on efficient administration by the Commission. Such administration is supported, in large measure, by promulgation and enforcement of rules. Efficient spectrum use vitally depends upon stations complying with these rules. Inspections are performed to determine whether stations are, in fact, in compliance with the rules and if not, to initiate action toward compliance by such stations. Failure to inspect would result in an increasing number of stations failing to comply with the rules and ultimately lead to a chaotic situation in the communications industry with a fallout effect on important governmental communications.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST IN FISCAL YEAR 1968

To assist the Commission in meeting its regulatory responsibilities, engineers of the Commission's Field Engineering Bureau made over 14,000 inspections of stations licensed to operate in 45 authorized radio services.

Although the total number of inspections represents a small fraction of the total stations licensed by the Commission, this sampling serves to identify critical areas in need of closer enforcement supervision and allows the FCC to retain some little control by making the licensee aware that an unscheduled inspection may be imminent.

Approximately 2,000 inspections of stations in the broadcast services were made during the fiscal year. 1250 of these were extensive inspections made prior to the renewal of the station authorization to determine whether the station was being operated in accordance with the Commission's rules. A prime area involved in these inspections was the equipment performance and measurements data required with respect to each licensee to insure that the station was transmitting a signal of acceptable quality. Violation notices were issued for failure to meet the technical equipment performance standards established by the rules governing the broadcast services and each licensee was required to respond by furnishing proof that his station had been brought into compliance with the rules, thereby affording the public a signal meeting quality standards.

During the year the Commission issued 74 notices of apparent liability, based on inspections, against broadcast stations. The forfeitures assessed totalled $66,500.

Field engineers made over 3,500 inspections aboard vessels which were required by act, treaty, or international agreement to have radio equipment aboard which meets minimum requirements considered necessary to enhance safety of life and property at sea. As a result of these inspections, 2,232 violation notices were issued and in many cases the master of the vessel was warned that the ship should not leave port before the equipment discrepancy was corrected. Should a vessel sail with equipment not meeting the required standards, the operating company and the master are exposed to severe penalties provided in the Communications Act. A substantial contribution to safety of life and property at sea was made by this enforcement effort.

Included in these inspections were 81 vessels recalled from "mothballs" to augment the merchant fleet in order that shipping requirements to Vietnam

could be met. The poor condition of many such vessels compounded inspection problems. Nineteen post-marine disaster inspections were conducted as a part of a continuing study to determine the efficiency of telecommunications equipment in averting or diminishing the possibility of a disaster at sea.

The engineers in charge of the FM–TV mobile enforcement units, in addition to fulfilling enforcement responsibilities, have rendered considerable assistance to licensees entering the field of stereo broadcasting. Data collected during inspections have revealed operational techniques that can be furnished licensees, enabling them to provide quality stereo broadcasts to the public during the developmental stage.

During 1967, there were over 12,000 inspections made of stations in the other-than-broadcast services. More than half of this number were inspections of stations in the public safety and industrial radio services. Inspections of stations in these services serve to reduce interference problems by enforcing observance of rule requirements, thus enabling licensees to provide a more efficient communications system.

Increase requested: 4 a.e.

Broadcast licenses are issued for a period of 3 years. In fiscal year 1967, the percentage of broadcast station inspections during the license terms was 51 percent. Because of the increase in the number of broadcast stations, an increase of 4 a.e. is requested even to maintain the present relatively low percentage of inspections.

NEED FOR INSPECTIONS

Mr. EVINS. You state about 2,000 inspections of stations in the broadcast services were made during the fiscal year; 1,250 of these were extensive inspections made prior to renewal of the station authorization to determine whether the station was being operated in accordance with the Commission's rules.

What happened in these 1,250 cases?

Mr. PLUMMER. As I said before, we turned up discrepancies in the technical field, like antennas out of adjustment, control operations not right. They may not have the proper operator on. In some cases the towers are not painted or lighted properly.

Mr. HYDE. I think it would be appropriate to mention what the procedure is on a routine discrepancy.

Mr. PLUMMER. The first step, routine discrepancy, we issue a discrepancy notice, form 793, to a licensee that says he has these discrepancies. He then has a chance to fix them up and come back to us with a satisfactory answer. Sometimes the answer is not satisfactory, and then we have to go back a second time. On basic ones, where they have no operators on duty, then we turn it over to the Broadcast Bureau for forfeiture.

REASONS FOR FORFEITURES

Mr. EVINS. During the year, the Commission issued 74 notices of apparent liability against broadcast stations and the forfeitures assessed totaled $66,500. What would be the type of case?

Mr. HYDE. Failure to have a properly licensed operator on duty, operation with excess power. Operation beyond the hours prescribed in license.

This is a notice of apparent liability. They have a chance to answer it and explain it, perhaps explain why they should not be assessed a fine. Sometimes this will result in lowering of the fine. Sometimes, not too often, it will mean a cancellation of it. Generally speaking, when there has been cause for issuance of notice, there will be a fine of some amount.

RESEARCH AND COMMUNICATIONS TECHNOLOGY

Mr. EVINS. We will turn to research and communications technology. This activity includes planning, development of information in theoretical and experimental areas for long-range and immediate use regarding improved communications techniques. Do prospective broadcasters submit to the Commission for exhibit and display the type of equipment they are going to use?

Mr. HYDE. Yes, sir.

EQUIPMENT STANDARDS

Mr. EVINS. Do you license or approve the equipment?

Mr. HYDE. We do have certain standards which must be satisfied. A good deal of this equipment now is manufactured under established standards. We inspect a—I don't want to use prototype in the way it is used in the manufacturing process—but we will approve a given one. Then we will be in a position to approve all others bearing that same type.

Mr. EVINS. What level of research does the Commission expect to reach in the next year?

Mr. HYDE. We are going to put the emphasis on policy research rather than technological research. We need to add resources in order to keep up with the technical research carried on in the many big laboratories in the country.

Mr. EVINS. In 1967 you had $1,374,000 for research. Last year we gave you $1,719,783. Next year it is estimated to be $2,450,000. It increases substantially each year. The activity relates to the delineation of future needs.

Mr. HYDE. We have discussed that.

Mr. EVINS. The Commission's conference activities included preparation for 42 international conferences (29 multilateral and 13 bilateral meetings). This is shown on page 94.

EMPLOYMENT ON RESEARCH PROGRAM

Mr. GIAIMO. Since you are putting such emphasis on research and spectrum planning analyses here, I notice that your positions figure is 17 for 1969. You are down from what you had in 1967, where you had 18. In other words, you have fewer people working on it now than you had 2 years ago.

Mr. HYDE. We do expect to get contract assistance in our research program. As a matter of fact, that way we have access to the kind of personnel that we just can't keep on our payroll.

We do expect to set up a planning group within our agency to monitor, but the manpower itself and the numbers we will have to have will have to be obtained through these research centers which have access to the kind of talent we need.

Mr. EVINS. Personnel does not increase, but your appropriation increases substantially. Is this to be done by contract?

Mr. HYDE. Yes.

REALLOCATION OF SPACE ABOVE 13.2 GC/S

Mr. GIAIMO. On page 91 you say additional rulemaking procedure is expected to be initiated concerning a possible reallocation of spectrum space above 13.2 gc/s. That is way up. What is it?

Mr. HYDE. They call that gigacycles or gygacycles. There is debate on pronounciation.

Mr. WATKINS. It is 13,000.

Mr. GIAIMO. That is really not feasible for the average use, is it?

Mr. HYDE. Not average, but Mr. Watkins can give you some uses that are possible.

Mr. WATKINS. There is considerable competition for the space but there is need for fixed point-to-point service and it is under very active consideration for communication satellites.

Mr. GIAIMO. That does not help our planning concerning land mobile.

Mr. HYDE. No.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record 88 to 98.

(The pages follow:)

VI. RESEARCH AND PLANNING IN COMMUNICATIONS TECHNOLOGY

This activity includes planning and directing broad programs to develop information and data in the theoretical and experimental areas for long range and immediate use regarding new and improved communication techniques and equipment, advanced phases of terrestrial and space communications, and radio wave propagation; advising and representing the Commisson in frequency allocation and usage matters, both nationally and internationally, collaborating and advising in the formulation of technical requirements of the rules and regulations of the Commission. Also included in this activity are type approval and type acceptance of equipment, adminstration of the rules relating to the operation of radio frequency devices, and performance of rule-making functions relative to the Experimental Radio Services.

FINANCIAL REQUIREMENTS

	1967 actual	1968 estimated	1969 estimated	Increase
Personnel compensation	$1,180,984	$1,193,515	$1,235,372	$41,857
Personnel benefits	86,240	87,690	89,500	1,810
Other obligations	107,575	438,578	1,125,578	687,000
Total	1,374,799	1,719,783	2,450,450	730,667

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
1. Spectrum planning and research	18	17.0	17	15.5	17	15.5		
2. Frequency management	52	50.8	51	48.5	51	48.9		.4
3. Communications tech	42	40.1	41	38.4	41	38.4		
Total	112	107.9	109	102.4	109	102.8		.4

PERSONNEL BY ORGANIZATION

Office of Chief Engineer	101	96.9	100	93.5	100	93.9		.4
Data Processing Division	11	11.0	9	8.9	9	8.9		
Total	112	107.9	109	102.4	109	102.8		.4

1. Spectrum planning and research

This activity relates to the evaluation of present uses and delineation of future needs, formulation of plans for meeting these needs, and study of potentially useful concepts and techniques. This includes examining and analyzing the electromagnetic spectrum to insure selection and allocation of proper bands to the separate services to provide the maximum future expansion and accommodation compatible with current needs.

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Spectrum planning and research	18	17	17	15.5	17	15.5		

One of the prime responsibilities of the FCC is to optimize the utilization of the non-Government electromagnetic frequency spectrum in the national interest.

The allocation and use of this great national resource have been growing at an enormous rate in the past several years. In the United States, for example, recent studies indicate that more than 80 percent of today's spectrum uses have come into being in the short period since World War II, and that the part of the gross national product derived from manufacture and use of radio equipment is estimated at $20 billion per year.

From the beginning, there has been a shortage of space for ever-increasing numbers of stations and new services in radio communication. Added to this is the rapid increase in numbers of operating licenses and in the new kinds of systems being devised to provide additional services.

In view of the use of established radio services and the development of new services, a sound doctrine for dealing with current and future problems must be planned and administered. The present crisis in attempting to resolve the land mobile frequency allocation problem may be attributed, directly or indirectly, in whole or in part, to an inability to devote adequate resources to spectrum planning.

Spectrum planning and research are essential to the orderly assignment of frequencies to the many services, all of which are competing for space in a spectrum that is rapidly becoming overcrowded.

Increased emphasis has been placed on long-range planning for the use of the radio spectrum. Various Government and non-Government studies of the spectrum have been initiated. Added attention was called to this activity recently by the President in his message to Congress which provided, among other things, for the establishment of a high level task force to make a comprehensive study of communications policy.

New emphasis should be placed on the Commission's proposed spectrum study program. In order to make more efficient use of the spectrum and to avoid chaotic radio interference conditions, the Commission will require more information about the ways in which interference is caused, the practical effects of interference and methods of reducing interference, so that criteria for proper spectrum management can be developed.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

Spectrum occupancy studies were made in Chicago to obtain information primarily on the land-mobile channels in that area. Measurements were also made in the Washington-Baltimore area. These studies combined with previous and later studies show gross inequalities in utilization of various portions of the spectrum. It is expected that spectrum occupancy studies will be made in other areas during 1968. In addition, HF measurements will be made to indicate the effect of the rising sunspot numbers and other factors, such as expanded cable and satellite communications on the use pattern of the HF spectrum.

Phase I of the Precipitation and Off-Path Scatter Investigation (POPSI) has been completed. Valuable data representing over 3,000 operating hours were

accumulated, and this preliminary study is designed to act as a basis for a statistical treatment of the effects of man-made and natural phenomena on the joint use of spectrum space by satellite and microwave communications systems. Phase II will be continued in 1968 with the activities transferred from the coast to an inland area. This extension of research activity will add immeasurably to the value of the original data. More sophisticated techniques will enable us to assign values to some of the unknown meteorological parameters in the problem. For instance, we are now able to measure the signal transmitted and received, but are unable to determine why the signal fluctuates in strength. We need to know what is happening "up there." We know what the signal strength is and if it can be determined what meteorological conditions cause the variations in it, we can extrapolate this information to any area in which the meteorological conditions can be determined.

A report was issued on the development of VHF and UHF propagation curves for TV and FM broadcasting. These refined the curves and methodology required in applying terrain correction factors for increased accuracy in prediction.

Propagation curves designed to improve prediction are expected to be developed in the following areas in 1968:

Land mobile—These will prove invaluable to businesses and municipal services using this particular service.

Maritime service—These curves will provide a valuable safety factor for small boat operators.

An intensive study was made to evaluate various multiplexing techniques for use to increase the communications capacity of the land mobile channels. A report on this study will be published in 1968.

In 1967 an acoustical model of radio frequency propagation was developed and has been used in several studies concerning the effect of fading on the communications services. Further development and use is anticipated in 1968 and ensuing years.

A study was made to provide more precise criteria for interference in the microwave radio relay services, whereby an increased number of such systems can be licensed in a given region without interference. This would increase the utilization of the spectrum by permitting more systems to be installed in a given area within the already overcrowded bands. A report is expected to be issued in 1968.

It is anticipated that rulemaking will be initiated looking toward the provision of spectrum space for broad-band, specialized communication purposes. In addition, a rulemaking proceeding is expected to be initiated concerning the possible reallocation of spectrum space above 13.2 Gc/s (upper part of the spectrum now almost entirely unused by Commission licensees).

A study has been made concerning the usage of regular broadcast facilities for a national emergency warning system in lieu of one requiring separate spectrum assignments, as well as a study of the simultaneous use of broadcast facilities for emergency teletype circuits.

2. Frequency management

This activity may be described as a management effort directed toward optimizing the efficiency of spectrum utilization. This entails an equitable distribution of the usable radio spectrum between radio services found to be in the public interest and the establishment of criteria for the operation of individual systems to insure the accommodation of the maximum volume of use within a given service; with a minimum of harmful interference within and between services. Effective frequency management requires a continuing review of the Table of Frequency Allocations to meet the changing needs of existing services and to accommodate new services and uses of radio as they develop. This in turn requires comprehensive assignment records, usage analyses and the prompt application of technological advances.

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
International allocations and agreements	17	16.5	16	15.2	16	15.2	----------	----------
National frequency usage	17	16.4	19	17.6	19	18.0	----------	0.4
Frequency records	18	17.9	16	15.7	16	15.7	----------	----------
Total	52	50.8	51	48.5	51	48.9	----------	.4

This activity encompasses efforts to obtain the most effective use of the radio spectrum in the national interest, within the framework of international treaties and agreements. Since the radio spectrum must be shared by all of the hundreds of thousands of U.S. radio stations, both Government and non-Government, the avoidance of chaotic interference requires close and careful advance coordination. Effective frequency management on a national basis requires, as a basic tool, usable records of all frequency assignments made by the FCC (non-Government) and of Government assignments made by the DTM. Emphasis must be placed on providing for satellite communications, mobile radio, microwave systems for both common carrier and private uses, development of UHF and CATV.

Because the propagation of radio signals is not obstructed by national boundaries, the orderly use of the spectrum requires extensive international coordination. First, there must be international agreement on the allocation of frequency bands and, in some instances, on the use of specific frequencies or channels. Without this, harmful international interference between radio stations of different countries would reach chaotic proportions. For example, the pilot of an aircraft on an international flight would find it difficult if not imposible to have good radio communication with countries along his route.

International coordination of individual frequency assignments has also been found necessary to avoid widespread interference between countries. As coordination cannot completely preclude international interference, effective procedures must be established to achieve the resolution of interference when it occurs. The rapid resolution of interference to radio-communications is particularly important in cases where safety of life and property is involved and where vital international circuits have been disrupted.

Without proper representation at international conferences on frequency usage, it would be impossible to protect the Nation's interests, and the United States would be unable to maintain its present position in world communications.

SIGNIFICANT ACCOMPLISHMENTS IN FISCAL YEAR 1967 AND THOSE FORECAST FOR FISCAL YEAR 1968

From extensive studies during the past 2 years, proposed criteria have been prepared for reliability and use of frequency diversity in the microwave radio relay services. After considering public comments received in 1968, it is planned to complete the promulgation of appropriate criteria.

In an effort to relieve the increasingly serious proximity interference problems occurring at crowded antenna sites, the Commission worked with representatives of the Departments of Agriculture and Interior, and arrived at a mutually acceptable set of procedures whereby Commission applicants are required to effect prior coordination with the Forest Service and the Bureau of Land Management when proposing to install or modify transmitting facilities on lands, especially high mountain sites, administered by those agencies.

Continuing extensive efforts were made during the year to alleviate the shortage of frequencies available to the land mobile services involving a multiplicity of approaches, both immediate and long range. By the adjustment of certain band edges in the 150.8 to 162 megacycles per second band, seven 30 kilocycles per second channels were made available to the services in what previously had been unassignable spectrum space; more assignable channels were created in the 450 to 470 megacycles per second band by cutting the channels in half, and the

Commission proposed a reallocation of that band, requesting public comments on the subject. It is expected that a reallocation of this band will be completed in 1968. Extensive work will continue to be directed toward alleviating the shortage of frequencies available to the land mobile services.

New procedures were developed to expedite the clearance of frequencies for Government contractual projects for experimental purposes. In the case of research operations related to space communications via satellites, it has been found expedient to require the applicants in the experimental services to conduct surveys related to potential interference with existing microwave communications services. This has worked to expedite frequency clearances and reduce FCC manpower requirements.

The Commission's conference activities included preparation for 42 international conferences (29 multilateral and 13 bilateral meetings) and substantial followup work is required on many of the conferences. Of major importance were a number of international sessions in preparation for the International Telecommunication Union (ITU), World Administrative Radio Conference (WARC) which was convened in Geneva on September 18, 1967, to consider maritime mobile and related matters. A major effort will be involved in implementation of the provisions adopted at this conference.

The Commission participated actively in the International Radio Consultative Committee (CCIR) plenary meeting, convened in Oslo. This conference resulted in CCIR actions which removed previous basic conflicts with FCC technical policy on single sideband and selective calling system plans.

During the year, 907 new cases of harmful international interference were opened and 665 cases closed; 48,244 monitoring observations were processed, and 43,840 of these were submitted to the International Frequency Board (IFRB); over 12,500 reports of infractions to the international radio regulations by foreign stations were forwarded to foreign administrations under procedures provided by those regulations; 87,507 non-Government frequency assignment actions were processed; 1,119 international broadcasting schedules were notified to the IFRB; other notifications, including those for stations in the Radio Astronomy and Space Services, totaled 7,533.

In 1967, maintenance of the frequency records for most of the radio services was transferred from punchcards to a computer tape. It is expected that the conversion of frequency records will be completed in 1968.

3. Communications technology

This activity includes specification of methods, systems, techniques and equipment for communications, involving investigating, testing, and analyzing equipment and developments in all phases of electromagnetic communications, spectrum utilization, and theoretical and applied studies on specific communications problems. Also included are the knowledge and limited capability to build transmitters, receivers, transmission lines, antennas, and terminal equipment, and to organize and operate complex systems composed of these elements to provide communications services.

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Technical studies	19	18.5	19	17.6	19	17.6		
Experimental radio services	5	5.0	5	4.9	5	4.9		
Equipment characteristics	12	11.4	11	10.4	11	10.4		
FCC equipment standardization and development	6	5.2	6	5.5	6	5.5		
Total	42	40.1	41	38.4	41	38.4		

The Communications Act of 1934, as amended, charges the FCC with the broad responsibility of promoting new uses of radio in the public interest. This responsibility is reflected by promotion of more efficient spectrum usage through developments in technology. Toward this end, studies are conducted to encourage the development and expeditious application of improved radio-communication equipment and techniques. For example, the amount of spectrum space required for

the transmission of a given amount of information can be reduced through higher frequency stability, advanced modulation techniques and improved receiver selectivity. Further technological advancements in millimeter wave equipments to operate in the high end of the allocated radio spectrum may lead to the practical application of such equipment in frequency bands which are now all but unused, thereby making available a greatly increased communication capacity.

The development of new radio services is essential to meet the increasingly diverse needs of our expanding economy and to avoid impeding progress in activities for which communications are necessary.

The development of new and improved technology is essential to cope with the increasing congestion of the radio spectrum and to minimize interference to the many important users of radio.

Technical studies are required to obtain the maximum benefit from continuing developments in communication satellite technology.

In order for this country to keep pace with other countries in developing and standardizing new and improved communications techniques, we must endeavor to extend FCC technical policies to international acceptance insofar as practicable. Otherwise, we must accept conflicting policies developed by other countries on which international agreement has been reached, in which case our radio services and communications equipment industry would be adversely affected both technically and economically.

Significant Accomplishments in Fiscal Year 1967 and Those Forecast for Fiscal Year 1968

A notice of proposed rulemaking has been issued providing for moving low power communication devices (chiefly 100 milliwatt walkie-talkies) out of the band which they presently share with the citizens radio service to a new band higher in the spectrum. This is one step toward correcting the interference situation existing in these services.

It is expected that tests will be completed to determine whether it is feasible to share the use of TV channels with the land mobile services, however, further time will probably be required in the analysis of the test data.

Studies indicate that the problems of frequency stability and frequency standardization have progressed to the point where this factor no longer poses a problem to the implementation of very precise frequency control of TV stations to reduce interference between stations or to permit assignment of more stations. It is anticipated that this office may be involved during 1968 and 1969 in evaluation of expanded operations of this type.

This office participated in many measurement standardization programs during 1967, and is presently participating in a program of standardization of TV and other oscillator radiation measurements with the Electronic Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and International Special Committee on Radio Interference (CISPR). A program for international comparisons of field strength measurements under the International Scientific Radio Union (URSI) is presently being headed by this office.

Extensive work will be required in the analysis of the forthcoming report of the Joint Technical Advisory Committee (JTAC) on electromagnetic compatibility, including studies concerning the practical applicability of its recommendations. This area of research is expected to enable an increased use of available spectrum space through analysis of mutual interference sources, with a view toward alleviating their deleterious effects.

Studies and recommendations concerning technical criteria for subscription TV systems were made in 1967. A notice of proposed rulemaking has been issued and, upon receipt of comments, technical standards will be written.

Recommendations for rules and technical standards for type acceptance of transmitters for use in class D citizens radio stations were completed in 1967. It is anticipated that new rules for this purpose wil be finalized in 1968. We hope this will improve the state of compliance with citizens service rules.

During 1967, technical standards were adopted for split channel land mobile equipment in the 450–470 mc./s band. In 1968, this office will be actively engaged in development of technical standards for community antenna TV systems (CATV), for the purpose of promulgating rulemaking in this matter.

It is anticipated that proposed rules to split marine VHF channels and specify new technical standards for equipment will be finalized in 1968.

Promulgation of rulemaking is anticipated for a comprehensive revision and updating of the rules concerning equipment type acceptance tests. New test conditions and procedures will be established for single sideband and other types of equipment not previously covered.

Much work was performed in the Special International Committee on Radio Frequency Interference which is striving to develop uniform measurement procedures and limits for interference.

During 1968 it is planned to issue new regulations in the Commission's rules governing radio frequency-stabilized arc welders, and to amend the rules to provide for radio frequency radiation from diathermy and miscellaneous equipment at microwave frequencies. Until now, use of microwave frequencies by industrial, scientific and medical (ISM) equipment has been permitted on a noninterference basis only without a specific radiation limit.

It is expected that a comprehensive technical report on eavesdropping and bugging will be prepared to provide information and to alert the public on techniques, practices and countermeasures.

Radio equipment lists have been transferred from the old IBM system to the computer. Parts A, B, and C of the list are being combined into one document which will result in more prompt issuance of the list and a saving in manhours for its preparation.

Certifications attesting compliance with the Commission's rules were reviewed and accepted on 2,176 different models of radio receivers (mostly FM and TV); 58 certifications on different models of industrial heaters; and four certifications on ultrasonic equipment; 1,182 formal and 185 informal applications for experimental licenses were processed during the year; 2,200 bulletins were distributed containing information regarding operation of low-power transmitters, and carrier current systems.

SUBSCRIPTION TV

Mr. EVINS. You state in your justification that studies and recommendations concerning technical criteria for subscription TV systems were made in 1967.

Mr. HYDE. They were.

Mr. EVINS. A notice of proposed rulemaking has been issued and upon receipt of comments standards will be written. What is the outlook for subscription TV?

Mr. HYDE. We have been asked by the House Committee on Interstate Commerce to defer action on that until they could examine the problem.

CITIZENS' RADIO SERVICE

Mr. EVINS. Very good.

We will take a look at the citizens' radio service.

Mr. SOLAN. This has been in the Commission for some time. This is a separate activity. We have broken it out as a separate activity.

Mr. EVINS. Broken out as a separate activity from a former division.

Mr. SOLAN. Part from field engineering and part from safety inspection.

Mr. EVINS. So you set up a new division from those two?

Mr. SOLAN. It is not a new organization, it is part of the Safety and Inspection Bureau.

Mr. EVINS. It is a new section in the Bureau?

Mr. SOLAN. Right.

Mr. EVINS. It has the same personnel?

Mr. SOLAN. Right.

It is expected to go from 40,000 licenses in 1958 to 850,000.

You state the rapid growth of the citizens' radio service has also generated many regulatory problems. Open disregard for the Com-

mission's rules, particularly by operators of the class D stations. What kind are they?

Mr. BARR. Most popularly known, of which there are some 800,000, relatively low power stations operating in the 27-megacycle band.

VIOLATIONS OF CLASS D STATIONS

Mr. EVINS. The open disregard of the class D stations has become so widespread that the usefulness of this device to the public has been seriously impaired. These rule violations, which include operation of radio as a hobby, use of unauthorized frequencies, overpower, obscene and profane language, and a lack of station identification, constitute a significant threat to the Commission's ability to carry out its statutory responsibility to regulate the use of the radio spectrum in the public interest.

You do not want to relax that rule, do you?

Mr. HYDE. We do not. We want to maintain citizens band as a communications service, if possible.

Mr. EVINS. Then you state that because of the seriousness of the problem in 1967 you created a task force to study the problem. In 1968 the budget requested funds to conduct a pilot enforcement program.

Why would you have a pilot enforcement program? If you know of the total disregard of your rules and regulations, you should have already made that determination.

Mr. HYDE. Our problem is how best to deal with this. One possible way, of course, would be to abandon the effort and close out the service.

Mr. EVINS. If you found a serious defect here, would you propose to have a pilot enforcement program?

Mr. HYDE. That is right. We are endeavoring to find out if by putting more emphasis on enforcement we can get better enforcement in this field. We are doing this in a limited area.

Mr. EVINS. You are going to use the same personnel in this that you use in the other bureau?

Mr. HYDE. Right.

FEES COLLECTED

Mr. EVINS. You point out, and Mr. Jonas earlier this morning alluded to it, page 101:

> It should be noted that the filing fees collected from citizens radio applications and paid into the U.S. Treasury during fiscal year 1967 greatly exceeded the cost of the entire citizens radio service program. During fiscal year 1967, $1,425,130.42 was collected in filing fees while the cost of the program for this service during the same period was only $687,623.

Mr. HYDE. Yes.

Mr. EVINS. In view of the violations of the rules and orders of the Commission, you might consider the rescheduling of some of your fees.

Mr. HYDE. We have given some thought to that, Mr. Chairman.

Mr. EVINS. Two rulemaking proceedings were initiated which should ameliorate the enforcement problem. The first would require that citizens radio equipment be type accepted, thus insuring that minimum technical standards are met. The second would remove the

operation of millions of low-power, unlicensed transmitters (walkie-talkies) from the citizens radio frequencies. Since the walkie-talkies are not subject to the same regulations as citizens radio stations their operation complicated the citizens radio enforcement program.

You have already adopted two rules which you say will solve the problem.

Mr. HYDE. Will help to solve the problem.

Mr. EVINS. It is going to ameliorate the enforcement problem.

Mr. WYMAN. We do not need to have a permit from you to operate a walkie-talkie, do we?

Mr. HYDE. Not under the low-power limit we have.

CITIZENS RADIO WORKLOAD

Mr. EVINS. You show the workload on 102 and the application received were 223,761 in 1967. Applications pending at end of fiscal year 1969, 6,600. So you must be able to handle these cases rather rapidly.

Mr. HYDE. Yes.

Mr. EVINS. The chart on 103 shows you the citizens radio service workload. Applications received in 1964 went to a peak and then it dropped down. What caused that peaking in 1964?

Mr. BARR. We instituted the fees and they came in ahead of time and then it dropped.

Mr. EVINS. You want 13 positions for the pilot enforcement program. You have already issued your rules on how to ameliorate the situation.

Mr. HYDE. The problem has not been resolved. We think we have made some improvement.

PILOT ENFORCEMENT PROGRAM

Mr. EVINS. Place in the record 105 and 106.

(The pages follow:)

As noted previously the pilot enforcement program which will be underway during fiscal year 1968 will be compiled and studied to form the basis for budget estimates to be submitted for fiscal year 1970. No further man-year increase is being requested for the Field Engineering Bureau for the Citizens Radio Service above the fiscal year 1968 level, pending evaluation of these programs.

However, it is expected that there will be a substantial increase in enforcement referrals in fiscal year 1968, particularly in view of the pilot enforcement program. A substantial number of cases referred in fiscal year 1968 necessarily will be carried into fiscal year 1969. This, coupled with the continued utilization of the pilot enforcement program staff which will be retained during fiscal year 1969, will require a 2.5-man-year increase to handle the increased citizens radio enforcement cases referred for the imposition of sanction and related clerical activity.

CATV

Mr. EVINS. Let's look at the other items. CATV we have talked about.

Mr. TALCOTT. I would like to ask a few questions before we leave CATV. I am a bit concerned about, what appears to me, an attitude of the Commission to stifle CATV. I have some information that there was an increase in CATV stations or systems in 1964 of about 250, in

1965–66 by about 300, but in 1966–67 only 50. This is when you issued your first and second reports and orders?

Mr. HYDE. Yes.

DEVELOPMENT OF CATV

Mr. TALCOTT. It seems to me that your announcements that you are going to study CATV or regulate CATV and that you are "seriously concerned" about many of the activities of CATV such as origination of programs, advertising, copyrights, and others, has had a very serious dampening effect on CATV.

Mr. HYDE. I am aware of the fact that the effort of the Commission to regulate this area has had an impact upon the speed of development of it. I must tell you that the regulation we have undertaken is designed to provide an accommodation between two industries which have not been able to find accommodation themselves.

Mr. TALCOTT. It appears to me that you are trying to protect the original industry, the broadcasting industry.

Mr. HYDE. I think we are not. That is not our attitude. I am saying that as reflecting majority opinion. Certain Commissioners feel that our regulations are onerous; others I believe feel that perhaps the course we have taken is not as stringent as it ought to be.

I believe that an analysis of the program we have followed would show a reasonable middle course here. We started out at one time to require that community antenna give 15-day protection to local stations as to the showing of network shows or films which would normally come through the station. We reduced that to 1-day protection. Our rules do require that the community antenna carry the local station. I would urge on you that it is a fair compromise pending the decision by the court.

Mr. EVINS. These are competing resources which the Commission is trying to make available to the public.

Mr. HYDE. We are trying to make it possible for the public to have the benefit of both services.

Mr. EVINS. I think I see one of the Commissioners shaking his head.

NONREGULATION OF CATV

Mr. LOEVINGER. I do not agree. I think the concern could be much ameliorated if we did not regulate CATV. Everything Chairman Hyde has said about CATV we have done is quite correct. What is significant is that he omitted in the hundred largest markets we have effectively prohibited CATV and in all the lower markets we have established a system by which we nominally permit it, and in fact permit anybody who wants to, in this particular market, come in and prohibit it by simply filing a paper without making any real showing at all.

Certainly I think the suggestion of Congressman Talcott——

Mr. TALCOTT. I would just as soon be out of this argument now.

Mr. LOEVINGER. I think what has happened is that the Commission has discouraged CATV and I think this is probably inhibiting some of the possibilities of using spectrum space. It certainly is not helping any, and CATV by and large does not use spectrum space as broadcasting does. CATV is not a substitute for broadcasting; but it could be a very effective supplement that I think would enable many more

people to get many more services without an increases in the amount of spectrum space that would otherwise be required.

CATV ON THE AIR VERSUS WIRED SYSTEM

Mr. Cox. I think we ought to set the record straight on that point, Mr. Chairman.

Unless you are contemplating a system which totally replaces over-the-air broadcast stations, with a system in which the program, the first time it is originated, is placed on a cable and never leaves the cable, you are going to have some spectrum use. If you have CATV systems in every community where they have been applied for, you would not reduce the need for a single television station, because they depend on the television stations for the bulk of their programs.

If you are talking about going over to a completely wired system, then you would have the possibility of freeing up some spectrum for other use. But in our tests of channel 6 sharing here in Washington we found that you could run land mobile base stations on channel 6 here and it did not interfere with the cochannel stations in Philadelphia and Richmond. However, it did interfere with the wired systems in motels, hotels, apartment houses, and schools where they are converting channels 20 and 26 down to channel 6. The wired system, even though it theoretically uses no spectrum, if it receives such interference from a substitute use of the spectrum as to give intolerable interference to the viewers, you may not be able to use the spectrum anyway.

Mr. GIAIMO. But that is a technical engineering problem; is it not?

Mr. Cox. It would be very, very expensive to reengineer existing systems or sets. I think, looking ahead, you would probably be able, at not too great expense, to manufacture sets which had sufficient shielding internally to protect it against this interference. But the existing sets, including the most modern sets in use in apartments and schools and motels, do receive interference if you have a base station operation within 2 or 3 miles.

WIDER CATV SERVICE

Mr. GIAIMO. But would you not arrive at the result Commissioner Loevinger suggests? I assume he suggests that you would reduce the number of local stations broadcasting over the air if they were replaced by a CATV operation. Is that not what you are suggesting?

Mr. LOEVINGER. Whether or not we will reduce the number of local stations I think is highly questionable at this point, but what we will be able to do is give everybody in the country very full service, the equivalent of broadcasting service.

Today there are many cities that have one, two, three or four channels which could have as many channels as New York City. Every place can have the same number of channels as New York City without increasing the present use of the spectrum.

Mr. EVINS. CATV that has been approved to date is largely for remote areas, is this correct?

Mr. HYDE. Yes.

Mr. EVINS. And not in the highly concentrated areas where there are existing facilities?

Mr. HYDE. Mr. Loevinger stated it correctly when he said our procedures have certainly prevented the development of service in the top hundred markets, but in other markets they have been progressing.

It is true that our regulations are a damper. I would have to concede that.

Mr. TALCOTT. We in our area are included in one of your so-called "top hundred markets" but we are in fact not in that market at all.

Mr. HYDE. I would urge that industries concerned here have not begun to solve the problem, and I think that you must concede it is appropriate for the Commission in the interim to try to find a middle ground.

Mr. TALCOTT. Between now and March 12 when your hearings are before the Supreme Court—you do have a couple of pretty important hearings before the Supreme Court regarding CATV, do you not?

Mr. HYDE. Yes.

COPYRIGHT CASE

Mr. TALCOTT. The copyright case and the one on whether you have jurisdiction over CATV to do what you are doing now.

Mr. HYDE. That is right.

Mr. TALCOTT. If in the copyright case the court held that CATV was responsible for copyright infringement, you would not need your first and second reports and orders. Am I not correct?

Mr. HYDE. We have urged the Congress by legislation to exempt the community antennas for liability for carrying the local station.

Mr. TALCOTT. I am pretty sure there will be some consideration for copyright infringement or compensation.

Mr. HYDE. We have also urged that Congress would provide the right to license them in areas outside the local communities.

Mr. TALCOTT. But if there is some judicial or legislative agreement that there should be some payment for use of copyright materials, then you could get out of the CATV business, could you not?

Mr. HYDE. I believe our problem will have been eased substantially. It is possible there will be some aspects of it that will give us regulatory responsibility, but I expect that when the copyright business is settled that our task will be eased considerably.

Mr. TALCOTT. Would it be all right to withhold any appropriations to your Commission for CATV purposes until after the Supreme Court decision?

Mr. LOEVINGER. Then none of them will get authorized.

LOCAL CATV OPERATION

Mr. TALCOTT. As I understand, there are many CATV station franchises by the local governing bodies that are now stymied. They cannot get a license from you to operate.

Mr. COX. They can operate in those communities and carry the signals that are locally available. They cannot import distance signals—that is signals from stations not providing service—without

either asking for waiver from the Commission, or going through a hearing to determine whether the public interest is affected.

Mr. WYMAN. Is not the problem with the CATV stations that when they pick these up on cable and put them out, you lose the selectivity of viewing desires of comparability between stations that ordinarily prevails out in the hinterland?

I happen to live in a type of marginal area and we have recently had cable available to parts of the area. What has happened is that all of a sudden all of the channels are almost equally sharp on the screen and the net result of that has been to put the local channel in a kind of doghouse because it cannot afford to carry as good programs as the Boston channels do. Before cable you used to be able to get the local channel real sharp and the others not too well so you would often choose the sharper picture.

If this condition is a fact are you not going to need regulatory authority? There is going to be tremendous economic impact from CATV.

NETWORK CONTROL OF PROGRAMS

Mr. HYDE. The point is network affiliation agreements copyright rights have not served to control the distribution of the program as between the network affiliates and the community antenna. I would expect that with the copyright rights of the local station who gets its programs from the network established that this principle would tend to control who shows the network program in this particular area.

Mr. COX. I think, Congressman Talcott, if Congress enacts legislation, or, if the court decided it and this was altered, this will significantly affect the details of what we have to do.

But I think we will still have a responsibility in this area, and since we have never gotten the staff in this field that we have needed all along, because of the stringencies of the war and so on, I would think that we are going to need the people we are asking for here simply to dispose of pending business and of the foreseeable developments in CATV that would still be within our jurisdiction.

Mr. TALCOTT. Are some of the amendments that you have been adding recently to your rules and regulations relating to both CATV and the microwave system, CIRS I guess, intended to reduce the number of new application so that you can protect this so-called spectrum problem or so that you will not be so bothered with it?

Mr. HYDE. I expect there will be as many views on that as there are commissioners here, but I would hold to my previous statement that they are designed to provide a fair accommodation.

Mr. TALCOTT. Then we are getting back to the copyright thing.

As soon as we can arrive at some fair payment to the originating station, then the principal problem about which you are concerned, the economic impact upon originating stations, will no longer be a problem.

Mr. HYDE. I will be very glad to have this matter settled in the market through competition at such time as we can have conditions of fair competition.

COURT DECISION ON JURISDICTION OVER CATV

Mr. TALCOTT. What if the court would decide on March 12 that you did not have jurisdiction over CATV?

Mr. HYDE. I think there would be urgent need for legislation.

Mr. TALCOTT. Then you would not need any money?

Mr. HYDE. No, we would not.

COST OF REGULATION OF TV COMMERCIALS

Mr. TALCOTT. How much money do you spend in your budget in regulating the commercials on TV?

Mr. HYDE. We do not have any allocation of funds for the regulation of commercials on TV.

Mr. TALCOTT. You are concerned about the regulation of commercials on CATV; are you not?

Mr. HYDE. Not really

Mr. TALCOTT. Do you mean that they are free to advertise as much as they want? There must be some regulation.

Mr. COX. We know that some systems in fact do sell commercial time. This has not been a general practice, and as long as they are simply repeating broadcast programing and originating only things like time and weather and a stock ticker or a news ticker, they really have had no great need to sell commercials to help defray the cost. They have projected the possibility that if they are subjected to copyright liability and, therefore, are cut off from distant signals under copyright law, they may then have to originate filmed programing for which they have bought the rights and, as an alternative to raising their rates to their subscribers, they might like to sell commercials.

The Commission has not resolved this matter. I am sure there are some communities where the sale of commercials would have no impact whatsoever on broadcast operations. There has been some concern on the part of broadcasters in areas where they do operate, and where the CATV system is building basically on the use of their programs for the cable operator's profit, that to permit him to start from that base and then to use that as a foundation for competing with them for the purchase of programing would be unfair.

But the Commission has not resolved that. We have in this recent CARS proposal and associated rulemaking suggested we want to explore the question as to whether a very limited usage of microwave for the relay of originated programing should be with associated commercials or not.

BROADCAST STATION PROFIT SYSTEM

Mr. TALCOTT. Then you are concerned about the economic impact by CATV upon the original broadcasting station. Do you ever look into the profit system of the original broadcasters?

Mr. COX. Yes.

Mr. TALCOTT. What is their profit situation?

Mr. COX. It varies. Of course the claims of impact which led the Commission, after having sort of overlooked the problem for some 14 years to adopt rules in this area came essentially from broadcasters in smaller markets. Now those stations by and large are profitable, but they were not making the enormous profits of the stations in bigger

markets. They were, therefore, in a far more vulnerable position in the event they suffered significant fragmentation of their audience.

Mr. TALCOTT. If you are concerned about the profits of the small stations, why do you prohibit the new stations in metropolitan areas where they are not likely to be interfering with the little station but only with the big profitable station?

Mr. COX. The concern, there is with new stations coming on the air.

For instance, if a cable system were allowed to operate without restriction in Philadelphia and were to import four signals from New York City, they would compete directly with the same kind of programs, and therefore be addressing themselves to the people essentially interested in that kind of program in Philadelphia, as are now being provided by three or four independent UHF stations in Philadelphia.

Now those stations would find that an already limited audience—which varies from 12 to 18 percent, depending on the figures you happen to get—they would be required to split that audience two ways and, what is still important, those stations I believe—Commissioner Lee is here, he can correct me—I believe that most of those are still operating in the red, with possibly one exception.

We believe that it is in the public interest for the people of Philadelphia and the surrounding areas to have available to them, not just the three network services free, but the four independent signals as well. And then if people can devise systems with due regard to copyright, and they get additional choice, fine. But we do not want to see the interest of some people in getting distant signals have the result of either eliminating existing services or blocking the development of future services that would provide an advertiser-supported service for everyone.

Mr. LOEVINGER. In fact, we refused to authorize a 6-month experiment in Philadelphia that has designed and proposed for the express purposes of finding out whether the assumptions on which Mr. Cox relies corresponds to any facts.

It was proposed that there be two systems set up together with a control group rigorously controlled, subject to before and after service, and the Commission by vote of four to three refused to permit the experiment to be instituted to obtain the facts. So this is purely an assumption of those wishing to limit existing services and expansion of future services.

Mr. HYDE. I would almost say this has developed into a Commission meeting.

Mr. TALCOTT. In making my remarks at the beginning, I just gave you an opportunity to get together. I think we have some interest in their appropriations depending upon the two Supreme Court decisions, Mr. Chairman.

Mr. EVINS. I read here the Commission has determined it had jurisdiction over all CATV systems, that it would not be in the public interest for CATV to remain unregulated.

Then they repeat the program to integrate it into a national television structure in a compatible atmosphere while promoting, without unduly impairing, standard television and broadcast services.

Mr. HYDE. That is right.

Mr. EVINS. That is the policy of the Commission.

I note that in 1967 you had 28 employees for this service; 1968, 44, and 1969 you asked for 57, 13 more. You have gone up from 28 to 57 in 2 years.

There is an indication of this sophisticated technology. Operating systems go up from 1,300 in 1964 to 1,930 systems presently in operation.

Number of persons served goes up from 4 million to 10 million.

How is a franchise different from a system? You have 1,930 systems and 1,860 franchises.

Mr. SCHILDHAUSE. Those are not built.

Mr. HYDE. This is municipalities and States.

Mr. EVINS. We will place in the record pages 107 through 117.

(The pages follow:)

VIII. COMMUNITY ANTENNA TV

Community antenna television (CATV) systems receive and amplify the transmissions of one or more TV broadcast stations and then redistribute the signals by cable to private homes or places of business of those who subscribe to the service for a fee. The coaxial cables used to distribute the signals to subscribers may carry up to 12 or more different signals (channels or programs) on different frequencies.

The Commission's regulatory program with respect to CATV is designed to integrate CATV into the national television structure so as to promote maximum television service while insuring that CATV performs its role without unduly impeding standard television broadcasting services.

FINANCIAL REQUIREMENTS

	1967 actual	1968 estimate	1969 estimate	Increase
Personnel compensation	$250,032	$478,840	$588,996	$110,156
Personnel benefits	18,433	29,801	38,868	9,067
Other obligations	12,385	69,364	24,364	−45,000
Total	280,850	578,005	652,228	74,223

PERSONNEL BY ACTIVITY

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
1. Processing applications and petitions	19	13.0	23	22.0	27	24.5	4	2.5
2. Rulemaking and research	2	1.0	4	2.8	4	2.8		
3. Hearings	7	7.1	17	16.4	26	22.4	9	6.0
Total	28	21.1	44	41.2	57	49.7	13	8.5

PERSONNEL BY ORGANIZATION

CATV Task Force	20	13.4	26	24.0	30	26.5	4	2.5
Broadcast Bureau			6	6.0	10	8.5	4	2.5
Hearing examiners	1	1.5	1	1.5	1	1.5		
Review Board	2	1.3	2	2.1	2	2.1		
Opinions and Review	3	3.3	6	4.9	11	8.4	5	3.5
Dockets Division	1	1.0	2	1.9	2	1.9		
Data Processing Division	1	.6	1	.8	1	.8		
Total	28	21.1	44	41.2	57	49.7	13	8.5

Community antenna television (CATV) systems have arisen in response to the public demand for improved television service. Generally their purpose has been to bring television to communities not served by the television stations because of remoteness or terrain, to offer television service to areas not enjoying it, and to provide good quality reception of color and other signals in other instances.

CATV systems receive and amplify the transmissions of one or more TV broadcast stations, then redistribute the signals by cable to private homes or places of business which subscribe to the service for a monthly fee. While early CATV systems usually offered 3 to 5 channels of television, the newer systems generally have 12-channel capacity, and an even greater number of channels is proposed for the near future. Signals may be distributed at considerable distances (several hundred miles) from the originating stations.

Latest industry figures indicate that there are now more than 1,900 systems operating, serving some 2,800 communities, about 1,860 additional systems or franchises granted but not in operation, and about 2,300 applications for franchises are pending in approximately 1,300 cities.

In most communities the systems are locally franchised; the Commission takes no action respecting the franchising. Distribution facilities are usually located on electrical or telephone utility poles and easement to public ways are often obtained from the local municipalities. The Commission has not exercised authority with regard to initial franchising, rate regulation and related matters. This matter is still being given Commission and congressional consideration.

The development of the CATV industry affected the allocation of television service established by the Commission in the exercise of its statutory authority and responsibility. The Commission concluded, after lengthy rulemaking procedures, that CATV systems may have an adverse economic impact upon local stations, particularly those which would be independent UHF stations. The Commission determined that it had jurisdiction over all CATV systems and that it would not be in the public interest for CATV to remain unregulated. The regulatory program with respect to CATV is designed to integrate it into the national television structure in a compatible atmosphere.

The rules call for the carriage of programs of stations placing a grade B or better contour over the communities of the systems and 100-watt translator stations in a certain priority, and provides for same day non-duplication of programs. No CATV system located within the predicted grade A contour of the 100 largest American Research Bureau (ARB) ranked television markets shall provide new service to subscribers which would extend the signals of a TV station beyond its grade B contour except upon a showing made in evidentiary hearing and approved by the Commission that such extension would be consistent with the public interest, and specifically the establishment and healthy maintenance of television broadcast service in the area. A request for evidentiary hearing is to be filed after the CATV system has obtained any necessary local franchise for operation or has entered into a lease to use facilities. The rules also provide for waiver of such hearing.

No evidentiary hearing is required for proposed CATV systems or operations located in markets below 100 in the ARB rankings or outside the grade A contour in the top 100 markets. However, the Commission will entertain on an ad hoc basis petitions from interested persons (*a*) concerning the carriage of distant signals by CATV systems and (*b*) for other relief under the rules. The Commission also indicated that cease-and-desist procedures will be employed where violations of its rules have occurred.

CATV today is a significant and growing part of the communications scene, engaging a broad range of governmental and private interests. Available indicators attest that the tempo of sophisticated growth is increasing as technology and human ingenuity combine. For example, in terms of sheer numbers, the following chart underlines the rapid growth of the industry:

	1964	Present [1]
Operating systems	1,300	1,930
Number of persons served	4,000,000	10,000,000
CATV franchises outstanding	750	1,860
Franchise applications pending	925	2,300

[1] Approximate.

Analysis of the form 325 information report indicates a growing trend toward increasing capacity for origination of local programing. Additionally, available industry data indicates that approximately half of the franchised nonoperating systems are in the major television markets.

In assessing the importance of CATV and its proper role in the Nation's communication structure, the following matters, among others, are being given consideration: the effect of CATV on the present broadcast structure, the implications of CATV growth for spectrum management, the public interest questions arising from an interconnected transcontinental microwave network designed to serve CATV systems, and the potential for subscription television as one of many future services within the capacity of CATV. Cable television merits consideration for its capacity to provide improved signal reception, its ability to multiply local outlets of television programing, to relieve the present shortage of frequency space, for its usefulness in an emergency communications system, and for its potential for additional services beyond the transmission of television signals. In recognition of the growing potential of CATV, the Commission is committed to encouraging and developing this potential, consistent with their other responsibilities, so as best to serve the public interest.

A special CATV task force, having an independent status and with the functions and organizational rank of a bureau, was created by the FCC in 1966. The purpose of the task force is to advise the Commission in CATV matters such as those discussed above, to implement rules and procedures, and to expedite the processing of applications and pleadings. The community antenna relay services (CARS) has been established by the Commission, in addition, for private mircrowave facilities serving CATV systems. This service also is the responsibility of the task force.

Several appeals going to the overall question of the Commission's jurisdiction and authority as asserted in the first and second reports have been consolidated for consideration by the U.S. Circuit Court of Appeals for the Eighth Circuit. Briefs were filed and oral argument was held in October 1967. Additionally, a decision by the U.S. Circuit Court of Appeals for the Ninth Circuit also involves questions as to the Commission's jurisdiction over CATV. The U.S. Supreme Court has granted certiorari. It is anticipated that oral argument will be heard early in 1968.

Historically, CATV systems have not paid licensing fees for the distribution of copyrighted television program material to their subscribers. In a suit commenced by a copyright holder for infringement of copyright by a CATV system, the U.S. District Court for the Southern District of New York conducted a trial and heard argument initially on the primary question of applicability of the copyright law. The court decided that CATV transmission of copyrighted television programs constituted copyright infringement. This decision was affirmed on appeal to the U.S. Court of Appeals for the Second Circuit. The U.S. Supreme Court has granted certiorari. It is anticipated that oral argument will be heard early in 1968.

Also, there is pending before Congress in the form of proposed legislation, a 10-year study relating to the overall revision of the U.S. copyright laws. This extremely complex legislation proposes, among other things, to make the copyright law specifically applicable to CATV systems and would impose different degrees of liability upon CATV systems under varying circumstances. It is reasonable to assume that the eventual outcome of the pending litigation and legislation will have a substantial impact upon CATV system operation. In the Commission's processing of matters relating to CATV, it seems reasonable to expect that it generally will proceed as it has in the past pending a copyright resolution. There is a good possibility that cease-and-desist proceedings relating to the top 100 markets and carriage and nonduplication generally may increase as the backlogs and consequent delays become more substantial.

1. Processing applications and petitions

This activity requires staff to process all CATV applications and related petitions up to the point of designation for hearing; also to handle correspondence and inquiries from Congress, industry, and the public with respect to the new CATV rules and regulations.

	1967 actual		1968 estimated		1969 estimated		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Personnel requirements	19	13.0	23	22.0	27	24.5	4	2.5

The following table shows the number of applications and petitions actually disposed of in fiscal year 1967 and estimated to be disposed of in fiscal years 1968 and 1969, as well as an estimate of the number that will remain pending at the end of fiscal year 1969.

	1967 actual	1968 estimate	1969 estimate	Estimate pending end of fiscal year 1969
(1) Top 100 market petitions (requests for evidentiary hearing or waiver under sec. 74.1107)	100	100	100	500
(2) Common carrier and business radio microwave applications (petitions to deny, petitions for waiver in renewals and routine of all applications)	59	55	50	30
(3) CARS microwave applications (professional analysis, including related petitions to deny)	20	50	60	100
(4) Petitions for special relief	130	193	175	200
(5) Institution of compliance proceedings (i.e., show cause orders, etc.)	20	35	40	75
(6) Notifications	60	125	125	750

Increase requested: 4 positions, 2.5 average employment

The processing of applications and petitions in fiscal year 1969 will generally be similar to that of fiscal year 1968. While the backlog in categories 2 and 3 above show substantial numbers, the task force has generally been able to dispose of these matters within 90 to 120 days after they have been filed. Our energies therefore will be focused on those matters which have been on file in excess of 120 days.

The top 100 market petitions involve the Commission's major market policy, the most important aspect of the CATV regulatory program. Substantial financial commitments have been and are being made by CATV entrepreneurs attempting to establish new systems and expand existing systems. As the delay increases in producing income, pressure will be generated to commence operations. Additionally, local interest in obtaining this service is evidenced by the increasing number of new franchise applications being made to and granted by local governing bodies.

Delay in receiving the franchised service and the local revenues generated by the grant of such franchised operations, causes increasing dissatisfaction and pressure from local governing bodies and potential subscribers. The time required to process these applications is expected to increase because of the increasing complexity of the factual situations as proposed CATV operations move into the major market areas. And, as Commission actions continue in this area, the arguments and rebuttals presented, along with detailed economic studies, will become increasingly sophisticated. The backlog in this area is increasing and is substantial not only in terms of numbers but also in terms of the substantial lengths of time (up to a year or more) that many of these matters have been on file.

The backlog respecting petitions for special relief will also be significant because a substantial number of those petitions will have been on file for more than 90 days. The workload in this area includes requests (a) by CATV systems asking for relief from the Commission's operating rules, (b) by television stations asking for greater relief than is afforded by carriage and nonduplications, (c) and by television stations seeking to prohibit otherwise permissible CATV system operations. Action in these areas must be prompt since they affect operating CATV systems and television stations which are suffering or may suffer financial harm. They also affect CATV systems which are imminently ready to commence operations, substantial preparation and investment having already been undertaken.

It is anticipated that the institution of compliance proceedings will require the major portion of the time of the additional staff proposed for fiscal year 1969. It is necessary that Commission action in this area be prompt since delay in prosecuting violations of the rules would encourage similar violations of the rules by others. Further, the Commission's task in obtaining compliance would become difficult if there were delay since unlawful actions permitted to continue are difficult to roll back. We expect the backlog of show cause orders to increase substantially in fiscal year 1969.

2. Rulemaking and research

This activity involves the basic rulemaking for this new service designed to integrate CATV into the national television structure so as to promote maximum television service while insuring that CATV performs its proper role.

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Personnel requirements	2	1.0	4	2.8	4	2.8	----------	

These activities are important in several respects. Continuing and proposed proceedings inquire into broad policy matters respecting (*a*) the continuing changing nature of communications and (*b*) new specialized communications developments, particularly those of a broadband nature, using large amounts of the radio spectrum, an example of which is CATV. There are proceedings designed to inquire into proposals for possible changes in existing Commission policy and rules governing the initiation and operation of CATV systems. Further inquiries and studies will relate, among other things, to ownership interests and cross-ownership interests in CATV systems, the signals carried, the number of subscribers, and other operational features of the CATV industry.

Increase requested: positions, average employment

The following rulemakings are illustrative of policy issues which have already come to the Commission's attention as requiring consideration and are expected to culminate in fiscal years 1968 and 1969. However, as the Commission's experience in this area grows, it is expected that there will be additional inquiries and rulemakings attempting to deal with the new and changing facets of this evolving new industry. Resolution of most of these proceedings, and particularly the more complex ones, cannot, without additional resources, be expected during fiscal year 1969.

The inquiry into the changing nature of communications and new specialized communications developments of a broadband nature is for the purpose of providing the most efficient and effective nationwide communications service possible. All bureaus of the Commission are interested and are taking part in these matters.

The rulemaking inquiry into the developing patterns of ownership of CATV systems particularly relates to public-interest question arising from ownership and control of CATV systems by Commission licensees in other communication services and to the problems inherent in such cross ownership and will include comments on the Commission's present rules and policies relating to multiple ownership, duopoly, concentration of control and diversification of the mass media. Also, a part of this inquiry is a determination as to the continued updating of the CATV information report form.

The information contained in the CATV information report form is being summarized and the data are being compiled and analyzed. The information should form a basis for suggestions as to indicated courses of action by the Commission in connection with CATV operations.

There is an inquiry reexamining our policy concerning the role to be assigned to translator stations in the Commission's national television policy. An extensive survey is being made of the potential problems in the translator field. This inquiry may well also affect CATV policies and rules.

There is a proposed amendment regarding the carriage of television signals which would have the effect of allowing a CATV system in a community within the predicted grade B contours of any television station in an ARB-defined

market (as opposed to a market defined by a grade A contour) to carry the signals of any other operating station assigned to a community in that area. The purpose of the proposal is to lessen the technological disadvantages now incident to UHF stations and to ease the administrative burden in considering waiver requests.

A further proposed amendment to the present rules would exclude educational television stations from the top 100 market hearings and permit CATV systems to carry educational television signals beyond the stations' grade B contours without first requesting an evidentiary hearing. This would lighten the Commission's administrative burden.

There is an inquiry into the underlying policy of the Commission respecting carriage and nonduplication of television signals. It may lead to modification of the present policy and existing rules. This should also ease the administrative burden which results from these policies.

In some of the above activities the Data Processing Division as well as the task force, will be involved in the analysis of information obtained in the proceedings.

3. Hearings

This activity involves all types of hearings—show-cause proceedings: trials ordered on top 100 market petitions; proceedings to deny microwave applications; and trials of petitions for special relief.

PERSONNEL BY ORGANIZATION

	1967 actual		1968 estimate		1969 estimate		Increase	
	Positions	Average employment	Positions	Average employment	Positions	Average employment	Positions	Average employment
Broadcast Bureau			6	6.0	10	8.5	4	2.5
Hearing Examiners	1	1.5	1	1.5	1	1.5		
Review Board	2	1.3	2	2.1	2	2.1		
Opinions and Review	3	3.3	6	4.9	11	8.4	5	3.5
Dockets Division	1	1.0	2	1.9	2	1.9		
Total	7	7.1	17	16.4	26	22.4	9	6.0

Fiscal year 1969 workload projection, analysis of cases designated for hearing

	1967 actual	1968 estimated	1969 estimated
(1) Top 100 market petitions (hearing under sec. 74.1107)	12	28	45
(2) Common carrier and business radio microwave applications (petitions to deny, petitions for waiver in renewals and routine of all applications)	1	3	5
(3) CARS microwave applications	1	7	7
(4) Petitions for special relief (sec. 74.1109)	5	10	7
(5) Institution of compliance proceedings (i.e., show cause orders, etc.)	11	12	25

Increase requested: Nine positions, six average employment

Office of Opinions and Review.—The Commission has directed that CATV proceedings be expedited. Yet other caseloads show no sign of slackening, and this office is trying diligently to keep current on CATV adjudicatory cases. The man-year requirement for CATV is increasing substantially during fiscal year 1968 and will increase even more markedly during fiscal year 1969. At the present time (December 1967) 25 CATV proceedings are in the process of being heard by hearing examiners and the rate of designation of new hearing proceedings far exceeds the rate of disposal of old ones. Between 50 and 75 additional evidentiary proceedings will be designated for hearing before the end of fiscal year 1968. Judging by recent experience, this office must expect at least one—and usually more than one—petition for reconsideration of every CATV designation order; a not inconsequential workload.

In the typical CATV cease-and-desist proceeding the Commission directs that the record be certified to it, and thus to this office, without the preparation of examiner's initial decision. Since the Commission has not delegated to the Review Board the task of issuing final decisions in CATV evidentiary cases, the digests of hearing records, exceptions to initial decisions and supporting briefs, preparation of summaries for oral argument and drafting of final decisions in each of these cases will necessarily devolve upon this office.

While CATV cases vary in complexity, the average length of time which will be required for a junior or intermediate grade attorney to process one of these CATV evidentiary cases after the last pleading is filed will vary from six weeks to three months. Moreover, a GS–14 or GS–15 supervisory attorney will have to spend about two to three weeks on the same case and the Chief must spend several days on it.

In view of the foregoing analysis it is apparent that if there are no radical changes in statutes, rules or policies affecting CATV hearing cases (and no such changes appear imminent), this office cannot hope to remain reasonably current with its caseload during fiscal year 1969 unless its present staff is doubled.

Broadcast Bureau.—The Broadcast Bureau will participate in the increasing number of hearings, devoted to CATV problems, which are forecasted for fiscal year 1969. Four additional positions are required to enable the numerous and complex hearings anticipated in the CATV area to be handled effectively and expeditiously. This is especially true in the so-called top 100 markets which represent the first 100 markets as ranked by ARB, where a maximum of television stations are located and where the greatest CATV activity has been experienced. The issues in these cases are necessarily sophisticated because of the interrelationship of the CATV industry with the broadcasting industry and common carriers. Sufficient staff are essential to perform this function.

Support Activities

Mr. Evins. Your support activities include budget, personnel, data processing and office services.

Jobs go up 27.

Emergency communications

Mr. Hyde. Twenty-one. That is emergency communications.

Mr. Evins. Twenty-one is the transfers?

Mr. Hyde. Right.

Mr. Evins. In prior years this was financed by transfers from OCD and OEP. Why the change at this time?

Mr. Hyde. I guess that is the answer, it was not our idea.

Mr. Evins. The executive order is quite old. It is not a current one. You state here the purpose of this is to insure the establishment of nongovernmental communication.

Mr. Hyde. I do believe that since it is a planning for emergency as well as military necessity, it is appropriate for us to do it.

Other workloads

Mr. Evins. You want to index the FCC reports. Have you done that?

Mr. Hyde. Yes, to some degree. We are well on the way.

Mr. Evins. Twenty-seven more jobs in the other supporting services. Your other objects we touched on this morning with the special study.

Mr. Hyde. Yes, sir.

Mr. Evins. You think now is the time for these special studies, Mr. Chairman?

Mr. HYDE. I do.

Mr. EVINS. Mr. Chairman, we think that you have a very important Commission and one of the very interesting Commissions. What, if any, cost analysis studies has the FCC made on the subject of subscription television as it relates to the public interest?

Mr. HYDE. We had a committee of Commissioners make a very comprehensive report. They submitted recommendations on it. Subsequent to this there were hearings on the House Committee of Interstate Commerce. As I indicated earlier, they were going to make a study and asked us to defer for 1 year from the time of that request. Since that time we have been fully occupied with other duties.

Mr. EVINS. It is apparent that you have many duties. You are a very important Commission, and we wish you good luck and success.

Mr. HYDE. We appreciate the attention that you have given our budget. I note that you have made a very thoroughgoing examination of it and I welcome it.

Mr. EVINS. This is our process. Thank you, gentlemen.

Mr. HYDE. Thank you, Mr. Chairman.

MONDAY, FEBRUARY 26, 1968.

FEDERAL HOME LOAN BANK BOARD

WITNESSES

JOHN E. HORNE, CHAIRMAN OF THE BOARD
MICHAEL GREENEBAUM, MEMBER OF THE BOARD
ROBERT L. RAND, MEMBER OF THE BOARD
SIMON H. TREVAS, EXECUTIVE ASSISTANT TO THE CHAIRMAN
HARRY S. SCHWARTZ, ADVISER TO BOARD, AND DIRECTOR, OFFICE OF RESEARCH AND HOME FINANCE
ALAN JAY MOSCOV, GENERAL COUNSEL
LAWRENCE M. WALTERS, DIRECTOR, OFFICE OF EXAMINATIONS AND SUPERVISION
WALTER J. BROWN, DEPUTY DIRECTOR, OFFICE OF EXAMINATIONS AND SUPERVISION
JERRY D. WORTHY, DIRECTOR, OFFICE OF FEDERAL SAVINGS AND LOAN INSURANCE CORPORATION
LYNDON R. DAY, DIRECTOR, OFFICE OF FEDERAL HOME LOAN BANK OPERATIONS
CLARENCE S. SMITH, DIRECTOR, OFFICE OF APPLICATIONS
ROBERT F. QUIGLEY, COMPTROLLER
ELMER B. CALLAHAN, BUDGET OFFICER
GRADY PERRY, JR., ASSISTANT SECRETARY FOR CONGRESSIONAL LIAISON

ADMINISTRATIVE EXPENSES

PROGRAM AND FINANCING

[In thousands of dollars]

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
1. Examination and supervision of Federal home loan banks	350	391	454
3. Chartering Federal and insuring savings and loan associations	576	633	682
5. Executive direction and staff services	1,620	1,873	2,108
6. Analysis of operations	605	663	728
7. Administrative services	892	1,067	1,116
Total accrued expenses—costs	4,043	4,627	5,088
Financing:			
Unobligated balance lapsing	367	.....	.....
Limitation	4,410	4,540	5,088
Increase in limitation for civilian pay increases	.....	87	.....

OBJECT CLASSIFICATION [IN THOUSANDS OF DOLLARS]

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	2,805	3,309	3,654
11.3	Positions other than permanent	46	36	39
11.5	Other personnel compensation	40	39	39
11.8	Special personal service payments	53	45	30
	Total personnel compensation	2,944	3,429	3,762
12.0	Personnel benefits	210	256	285
21.0	Travel and transportation of persons	85	111	121
22.0	Transportation of things	2	6	6
23.0	Rent, communications, and utilities	426	428	465
24.0	Printing and reproduction	21	26	40
25.1	Other services	117	137	166
25.2	Services of other agencies	95	59	61
26.0	Supplies and materials	60	90	94
31.0	Equipment	83	85	88
93.0	Administrative expenses included in the fund as a whole	−4,043	−4,627	−5,088
	Total accrued expenses—costs			

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	333	335	351
Full-time equivalent of other positions	6	6	6
Average number of all employees	285	324	343
Average GS grade	8.5	8.6	8.6
Average GS salary	$9,566	$10,288	$10,404
Average salary of ungraded positions	$5,585	$6,084	$6,049

Non-Administrative Expenses

PROGRAM AND FINANCING [IN THOUSANDS OF DOLLARS]

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
2. Supervision of Federal and State-chartered institutions	768	901	970
4. Examining savings and loan associations	11,246	12,133	12,755
5. Executive direction and staff services	532	616	671
8. Special studies of savings and loan industry	88	187	225
Total accrued expenses—costs	12,634	13,837	14,621
Financing:			
Unobligated balance available, start of year	−500	−412	−225
Unobligated balance available, end of year	412	225	
Unobligated balance lapsing	919		
Limitation	13,465	13,650	14,396

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	8,476	9,360	9,974
11.3	Positions other than permanent	17	17	17
11.5	Other personnel compensation	11	12	12
11.8	Special personal service payments	75	94	55
	Total personnel compensation	8,579	9,483	10,058
12.0	Personnel benefits	658	729	782
21.0	Travel and transportation of persons	2,374	2,452	2,509
22.0	Transportation of things	9	15	15
23.0	Rent, communications, and utilities	410	424	448
24.0	Printing and reproduction	82	90	90
25.1	Other services	137	214	252
25.2	Federal Home Loan Bank Board services	303	347	382
	Services of other agencies	21	13	13
26.0	Supplies and materials	34	37	37
31.0	Equipment	27	33	35
93.0	Nonadministrative expenses included in the schedule for fund as a whole	−12,634	−13,837	−14,621
	Total accrued nonadministrative expenses—costs			

PERSONNEL SUMMARY

Total number of permanent positions	953	953	953
Full-time equivalent of other positions	5	5	5
Average number of all employees	838	869	889
Average GS grade	10.2	10.3	10.3
Average GS salary	$10,241	$10,953	$11,176

Mr. EVINS. The committee will come to order. We have with us this morning our friends of the Federal Home Loan Bank Board. Mr. John E. Horne is the distinguished Chairman of the Board. Mr. Michael Greenebaum is a member of the Board. Mr. Rand is a member of the Board. Mr. Trevas is the Executive Assistant to the Chairman, and Mr. Harry Schwartz is the Adviser to the Board. Mr. Alan Moscov is the General Counsel. Mr. Lawrence M. Walters is the Director of the Office of Examination. Walter J. Brown is the Deputy Director of Examination, Mr. Jerry Worthy is the Director of the Federal Savings and Loan Insurance Corporation. That is a big corporation and has about $135 billion worth of protection. Mr. Lyndon R. Day is the Director of the Office of Federal Home Loan Bank Operations. Clarence S. Smith is Director of the Office of Applications. Mr. Robert F. Quigley is the Comptroller, Mr. Callahan is the Budget Officer, and Mr. Grady Perry is Assistant Secretary for Congressional Liaison.

We are always pleased to hear you, Mr. Chairman, and you may proceed as you wish.

GENERAL STATEMENT

Mr. HORNE. Thank you very much, Mr. Chairman and other committee members.

Mr. Chairman and members of the committee, my associates and I appreciate the opportunity to appear before you today in support of our fiscal 1969 budget requests. Also, I wish to take this opportunity to thank you, Mr. Chairman, and the members of your committee for your objective consideration of the Board's needs in connection with our previous budget submission.

As I have done each year, Mr. Chairman, I wish to depart from my testimony for a moment because I think it is helpful to this committee for me to give résumé of what we have done during the year, the problems we see in the industry, and the progress we have made in solving problems of the past.

I think it enables you better to understand this $145 billion industry which finances in excess of two-fifths of all of the past year homebuilding that is done in America.

SAVINGS INFLOW ON 1967 OPERATIONS

When we last appeared before this committee I reported that we had just completed one of the most trying years for the Board in the wake of the very tight money situation in 1966 and intense competition from commercial banks for savings. Nevertheless, I mentioned that savings inflow had improved considerably toward the end of 1966 and into 1967.

Assessing it in light of developments following my testimony in February 1967, we might describe the change in early 1967 from that

of 1966, as a substantial improvement for the better in the economic environment facing the savings and loan industry. Monetary policy had eased, and interest rates had declined. Savings flows into savings and loan associations were rebounding sharply from the depressed levels of 1966.

The impact of improved savings flows upon mortgage and housing activity was not immediate, as might be expected. Some builders were slow to recognize the changed conditions in the mortgage markets, and for those who did understand the changed condition, it took time for them to gear up their construction plans. Associations were also understandably cautious about committing new funds before the improvement in cash flow could be considered as more than temporary. Under these circumstances, associations used some of their improved cash flow to replenish their liquidity that had been drawn down sharply in 1966. They also reduced their advances outstanding from the Federal home loan banks from the peak level of $7.3 billion in July 1966 to a current level of $4.4 billion.

INCREASE IN MORTGAGE LENDING

However, as savings inflows continued to improve, associations reentered the mortgage market on a large scale and, by May of 1967, mortgage loan commitments outstanding rose above the year-ago level. At the end of 1967, mortgage loan commitments were $3 billion, about double the level at the end of 1966.

With the increase in loan commitments, mortage lending began to rise sharply. For 1967 as a whole, savings and loan associations added about $7½ billion to their mortgage portfolios compared to only slightly above $4 billion in 1966. With other type lending institutions actually reducing their investments in home mortgages, savings and loan associations played a very crucial role in supporting the mortgage market and in making possible a sharp recovery in housing starts. Forty-eight percent of the total increase in home mortgages for the year as a whole was absorbed into portfolios of savings and loan associations.

I believe, Mr. Chairman, that is about the highest percentage that has been reached during the history of the savings and loan industry.

However, 1967 did not produce as much of an increase in total mortgage volume, as savings and loan activity would suggest. Interest rates on long-term securities began to rise again in the spring of 1967 as new securities flotations rose to record levels. As a result, certain other lending institutions shifted to other types of loans or investments.

The result has been to cause many other lending institutions to pursue a cautious commitment policy with respect to mortgage loans, especially on homes. Accordingly, savings and loan associations again have found themselves the focus of pressures in the mortgage market. This is the reason why, as noted above, associations accounted for almost half of the home mortgage acquisitions in 1967. This was possible because associations continued to attract a relatively large volume of savings for 1967, despite unfavorable monetary developments later in the year. Thus the net savings inflow was $10.7 billion for 1967 compared to $3.7 billion in 1966.

I might also, for clarification, state that these figures include the dividends on savings that were already in the association, and simply were kept by the savers in their accounts for the most part.

ESCALATION IN INTEREST RATES

Yet sharp rises in interest rates in 1967, exceeding the peak rates of 1966 in most cases have once again raised the specter of disintermediation. While associations have so far been spared a repetition of the events of 1966, savings inflows have tapered off, and in some cases rather sharply, in recent months. With the economy now growing more rapidly and with monetary policy bearing the major share of anti-inflationary economic policy, a further decline in savings inflows could well be in the offing with serious consequences for the mortgage and housing markets.

We are hopeful that the regulations setting maximum interest and dividend rates will continue to maintain the equilibrium in competition between commercial banks and savings and loan associations and prevent a drastic shift of funds that might drain funds sharply away from the mortgage market—as occurred in 1966. We should be spared the dangers of rate escalation and of a serious squeeze on the earnings of associations such as developed in 1966. Yet we are aware existing regulations can never eliminate altogether the difficulties that will arise for savings and loan associations if money markets continue to tighten appreciably, and these regulations would become increasingly ineffective should interest rates on open market instruments that compete with savings accounts rise from present levels.

Mr. JONAS. Do you mind being interrupted there?

Mr. HORNE. No, sir.

Mr. JONAS. Does this mean that you are opposed to the legislation now pending to increase these limits?

Mr. HORNE. I am not sure I know what you mean.

Mr. JONAS. You are not involved, but the VA and FHA are.

Mr. HORNE. I see what you are talking about.

Those are interest rates you are talking about. No, sir; I am not opposed to it, for the very simple reason I must confess, I have had a change of mind about it over the past few years because interest rates have seemingly reached a level at which they are going to remain, if not go higher. And I think the FHA and HUD and VA are simply facing facts when they realize the 6-percent rate——

Mr. JONAS. The savings and loan institutions are supporting this?

Mr. HORNE. That is right, sir. And I am not opposed to lifting the rate that has been recommended. It is simply facing facts.

Mr. JONAS. If one is realistic, you have to face the facts as to competition. You cannot keep interest rates down arbitrarily.

Mr. HORNE. That is right.

Mr. JONAS. And just in part of the economy while somebody else bids up the money.

Mr. HORNE. Yes, sir. And while I do not want to go too far astray from my testimony, except as you may wish me to, there are nine States I believe which have usury rates of 6 percent and I believe that in those States they are going to have to face the facts, as you have just pointed out, that we are having to face here.

Mr. JONAS. Thank you.

LIQUIDITY POSITION OF FEDERAL HOME LOAN BANK SYSTEM

Mr. HORNE. We are aware of these possible problems. Indeed, ever since the events of 1966, we have explored various means of coping with any new tight money situation so as to prevent or ameliorate serious consequences for the mortgage and housing markets. In the immediate future, the present high level of mortgage loan commitments held by associations should provide a cushion for the mortgage market. In addition, we have had some success in encouraging associations to improve their own liquidity above legal requirements as a temprorary buffer against any serious dropoff in savings flows. By the end of 1967, partly I think because of the Board's encouragement, insured savings and loan associations had increased their liquidity by $2.6 billion over the low point of 1966.

As a matter of Board policy, too, the Federal Home Loan Bank System itself has been maintaining a substantial cushion of liquidity to provide funds for advances to associations, if needed, and reduce the need for immediate recourse to the private securities market, hardly a very dependable source of funds during a tight money period. To build up this pool of liquidity, the System has been rolling over most of its maturing consolidated obligations despite the sharply reduced need for advances by associations in 1967.

The result is that the System currently has liquidity of $1.8 billion. While the funds available to the System would still not be sufficient to meet the total gap in mortgage funds that would arise from a repetition of the events of 1966, it should provide a considerable cushion.

In addition, we have lengthened the maturities of our consolidated obligations to the extent possible, so as to be less at the mercy of future adverse market conditions.

Of course, as we lengthen these securities, Mr. Chairman, we pay a little bit more for the money.

As a result of these various actions, we are now in a better position than we were in 1966 to meet a new money crunch and to provide maximum support to the mortgage market.

CURRENT PROBLEMS FACING SAVINGS AND LOAN ASSOCIATIONS

Now I want to turn briefly to the problems that associations are currently facing. Last year, I noted the large volume of delinquent loans or foreclosed real estate in the portfolios of certain associations that had engaged in overly easy lending practices in earlier years and that represented a heritage of the overbuilding and some unsound practices that characterized the early 1960's. I also noted the earnings squeeze which in 1966 was aggravated by higher dividend rates but with relatively little new funds available for associations to invest in higher yielding mortgages.

These problems are still with us in varying degrees. Recent data actually show some increase in delinquent loans and foreclosed real estate in the portfolios of associations despite a welcome decline in new foreclosures. Furthermore, many associations continue to have an inadequate or thin margin of earnings available for reserves after payment of dividends to their savers. Without dividend rate regulations, these associations would be in a more difficult situation. I cite these

problems because they create continuing need for close surveillance on our part of savings and loan associations. The industry as a whole is in good condition but there are enough individual exceptions to provide us with plenty of work and concern.

In that connection, we are aware that insured savings and loan associations are still operating in a strongly competitive market, and we do not anticipate any easing in this regard in fiscal year 1969. Also, with a continuing squeeze on earnings resulting from the cost of money, we must be mindful of the temptation to make high-risk, high-rate loans to generate more income. The Board, of necessity, must constantly review and be ever alert to such developments which might possibly adversely affect these institutions.

STATUS OF EXAMINATION PROGRAM

Examinations of savings and loan institutions were maintained on a current basis in fiscal year 1967 and the first half of fiscal year 1968. We intend to maintain our examinations schedule for the balance of fiscal year 1968 and fiscal year 1969 on the same basis. In addition to such regular examinations, special examinations must be conducted promptly and effectively when required without retarding the regular examination program. Thirty such special examinations have already been commenced in fiscal year 1968. Forty-seven appraisal assignments have already been completed during the first half of fiscal year 1968. This is more than half of those conducted for all of fiscal year 1967.

NEW EXAMINATION PROGRAM FOR AFFILIATES OF INSURED ASSOCIATIONS

A relatively new and growing field in the area of examinations is that involved in the examination of affiliates of insured savings and loan associations. In the first half of fiscal year 1968, 39 examinations of affiliates of insured institutions were made and 200 more such examinations are planned for the balance of the fiscal year. It is estimated, also, that examinations of 500 affiliates will be made during fiscal year 1969.

With the passage of the Financial Institutions Supervisory Act of 1966, Board examiners were empowered to make examinations of the affairs of all affiliates of insured institutions necessary to disclose fully the relationship between such institutions and their affiliates, and the effect of such relations upon these institutions.

Mr. EVINS. If I might interpret, Mr. Chairman, this new law empowered the Board to make examinations not only of the Federal savings and loan institutions but their affiliate institutions.

Mr. HORNE. Yes, sir.

Mr. EVINS. And these may be in some instances large banks.

Mr. HORNE. It could be.

Mr. EVINS. In instances where banks control the Federal savings and loan associations, might you be making examinations of the banks also?

Mr. HORNE. I doubt, Mr. Chairman, if we get into banks.

Mr. EVINS. What if they have a substantial interest?

Mr. HORNE. We might examine them but more likely we would work with the FDIC or Comptroller of the Currency or Federal Reserve Board.

Mr. WALTERS. We have not encountered that yet and I think certainly, as we always do, we would cooperate and coordinate with the FDIC.

Mr. EVINS. Does this impose a larger responsibility and burden upon you??

Mr. HORNE. Yes, sir; it does.

Also, as you point out, these could include construction companies, insurance agencies, and a variety of affiliates.

The authority thus granted imposed on the Board's Office of Examinations and Supervision responsibility for developing techniques and disciplines in the conduct of the examination of affiliates different from that involved in the examination of savings and loan associations. Having developed these special skills that Office is now in a position to step up its affiliate examination schedule for fiscal year 1969 to the number previously indicated. Fortunately, many of the techniques developed for the examination of affiliates will be pertinent to the recently acquired responsibilities of the Board for the examination and regulation of savings and loan holding companies under the Savings and Loan Holding Company Amendments of 1967 (Public Law 90-255).

As you gentlemen no doubt know, that bill was signed by the President last week and immediately became effective.

In our examination and supervisory program, emphasis continues to be placed on prevention of trouble. Attention is directed to deficiencies in policies, practices and procedures which require close scrutiny and continuous supervisory attention to effect correction. Availability of authorities under the Financial Institutions Supervisory Act of 1966 has proven its value in dealing effectively with developing problems. The effectiveness of the powers granted is not measurable solely in terms of numbers of actions formally initiated pursuant to its provisions. The mere existence of the authority set out in the Supervisory Act exerts an influence on the stance of the supervisor on the one hand, and receptiveness of the supervised on the other.

We anticipated this would take place when we asked Congress for this legislation, and it is developing as we anticipated.

Our experience has been that the influence generated by this statutory authority frequently leads to early resolution of potential dangers.

ACTIVITY OF PROBLEM CASES IN 1967

As I have informed this committee in previous appearances, the Board keeps a detailed ready-reference record of developments in those institutions which are of some degree of supervisory concern. A considerable portion of the Board's time is consumed in dealing with problem cases of varying degrees of seriousness. I am happy to report a decline in the number of associations with signals of potentially dangerous proportions as well as some abatement, over-all, of very serious problem cases. The Act of 1966, as I have indicated, is beginning to be felt. I feel sure that the Holding Company Act signed Wednesday, February 14, will contribute further to the health of the

industry generally if we can recruit the personnel, qualitatively and quantitatively, essential to its effective administration.

It would be premature to feel satisfied, but what has been accomplished does strengthen our confidence and resolution to pursue vigorously our program of preventive supervision. While it is recognized that the techniques and procedures involved in preventive supervision, consume much time, this time expenditure is offset by savings gained in well managed institutions. For this reason, we have been able to date to meet our responsibilities in this area without requesting additional positions in the Office of Examination and Supervision.

During calendar year 1967, the Federal Savings and Loan Insurance Corporation became financially involved in the affairs of five problem associations which had savings capital of approximately $30 million. By contrast, during 1966, the Corporation became financially involved with twelve such associations which had savings of about $446 million. Each of these five cases in 1967 was solved by merging the problem institution into a sound association with the Corporation agreeing to make a contribution in the amount of the losses to be incurred. The losses to the Corporation are estimated to be in the range of $2 million. In addition, the loss estimate on one case from a previous year was increased by $2 million for total estimated 1967 losses of about $4 million, as opposed to estimated losses in 1966 of approximately $33 million. Of this latter amount, $21 million is applicable to 1966 cases, $12 million to prior years.

While 1967 was a relatively good year with reference to losses and financial involvement, to avoid misleading you we should point out that there are a number of problem insured institutions which may require FSLIC involvement in the near future. Also, as of December 31, 1967, the Corporation had 29 active cases representing problem associations with which it has been financially involved in contributions, loans, purchases of assets or receiverships over the past six years. On the positive side, the Corporation's reserves available to cover losses amounted to more than $2 billion at the end of 1967.

Mr. JONAS. Does the situation still exist that these problem cases are concentrated in identifiable sections of the country?

Mr. HORNE. Yes, sir, pretty largely, and are the same sections I have so identified in the past.

Mr. EVINS. Proceed, Mr. Chairman.

PROGRESS REPORT ON STUDY OF SAVINGS AND LOAN INDUSTRY

Mr. HORNE. Last year I reported to this Committee the actions of the Board in appointing an advisory panel and a director of research to undertake a study of the savings and loan industry, as authorized by Public Law 89–426, approved May 13, 1966. I also informed the Committee that a contract had been signed with the University of Pennsylvania providing for the study at a cost of $400,000, and naming Professor Irwin Friend of that university as director. $100,000 of the authorized $500,000 for the study was retained by the Board to cover contingencies and publication costs, and expenditures directly related to the study.

I should like to note briefly the progress made since then. A professional staff of 21 persons was assembled from various universities by Professor Friend. The full staff was not completed until April

1967. However, substantial preliminary work was performed on the study even before this. In the last report, filed on November 3, 1967, Professor Friend stated that some of the authors had developed extensive preliminary working papers and that almost all the others had started research on their topics. It is still too early to be able to state what conclusions will emerge from the study, but we are eagerly awaiting the completion. The study is scheduled for completion by December 1968, and I hope to be able to submit to this Committee with our fiscal 1970 budget submission the recommendations of this group, which may or may not be met, of course.

I will be surprised if it is entirely completed by 1968.

Mr. BOLAND. What are some of the things you are looking into?

Mr. HORNE. The study will look into the soundness of the industry as a whole, into our own operations at the Board level, what recommendations should be made, that is, where the industry can be improved and also improve the soundness of our operations. It is the supervision and the soundness or unsoundness of the practices in which the industry engages that we are concerned about.

You might remember I explained in early 1965, that the President asked that such a study be undertaken from outside sources, and then we asked Congress for the authority, which Congress has granted.

Mr. JONAS. Will some of the research be performed in the field?

Mr. HORNE. Yes, sir; some of it will be. Also, even though people not connected with the industry are actually doing the research, we helped to make possible a liaison between industry members and this committee so they would feel free to go to industry members for whatever information or comments they might wish to make.

Mr. EVINS. We gave you the authority for the study and funded it for a half-million dollars. Is this going to be an academic study or a hard-nose practical business study?

Mr. HORNE. I hope it ends up being a hard-nose study. That is what we have asked for.

RELATION OF STUDY TO PENDING LEGISLATION

Mr. BOLAND. Does this study have any connection with the legislation now pending before the Rules Committee with respect to savings and loans?

Mr. HORNE. I think only very remotely. The opposition is trying to tie them closely together.

Mr. EVINS. Is that what they are talking about when they mention the study at the Wharton School of Finance and ask that the request be deferred on the legislation until the study is completed and recommendations are made?

Mr. HORNE. Yes, sir; this is what the opposition is asking be done. To be perfectly honest with you, I think this is a delaying tactic.

Mr. EVINS. When is the report scheduled to be completed?

Mr. HORNE. It is scheduled for completion by December 1968.

Mr. EVINS. Proceed.

DEVELOPMENTS WITH RESPECT TO NEW HEADQUARTERS BUILDING

Mr. HORNE. As you may recall, I also reported last year on the progress made by the General Services Administration in the acquisi-

tion of a site for the construction of a suitable headquarters building in the District of Columbia, authorized by Public Law 89–754. All that we could report then was that the Board had reviewed several available sites recommended by the General Services Administration and had authorized the GSA to select an architect to conduct feasibility studies of these sites in relation to the Board's needs.

On the basis of such feasibility studies the General Services Administration concluded that a site adjoining Judiciary Square was the most desirable location for the building. On the basis of all available information the Board concurred in that view. For the benefit of the committee we have prepared a sketch of the site.

The sketch shows over toward the left where the present building is located, and then on to where the new building will be located.

Mr. EVINS. The site location has been determined, and agreements are underway. These plans are rather well firmed up; is that correct?

Mr. HORNE. That is correct.

Mr. EVINS. Tell us again how much is the building going to cost?

Mr. HORNE. Congress authorized $13.2 million at the time, for the land and the building.

Mr. EVINS. Is it contemplated that any other Government agencies will be housed in the building other than the Board?

Mr. HORNE. No, sir. However, the building will be designed for future growth of the Board and any excess space would be available for GSA rental purposes until it is needed.

Mr. EVINS. Fine, Mr. Chairman.

Mr. HORNE. A matter of concern in the selection of any site was its proximity to public transportation, particularly to the new subway system. Personnel of the Board frequently work into the late evening, including our secretaries and typists. One needs only to read the daily newspapers to appreciate my concern. The first subway station to be erected in the District of Columbia will be the Judiciary Square station and an entrance to that station will directly abut the Fourth Street side of the proposed FHLBB building.

It was necessary for the GSA to obtain the approval of the National Capital Planning Commission for the site. I kept the chairman informed of some of the difficulties encountered in that connection, but on October 12, 1967, the Planning Commission finally approved the site. The GSA informed us that on January 17 the Department of Justice had filed an action for the acquisition of the site, and the Board, at the request of GSA, deposited $4,350,000 for acquisition of the land and the cost of site studies.

At page 39 of our budget justification, further details concerning the acquisition and related matters are set out. But briefly for fiscal 1969, we estimate that up to $1.5 million may be needed for payment of architectural, engineering, and related services and costs. As I have previously testified, the funding for the building will be accomplished by a loan from the 12 Federal home loan banks repayable within 25 years. Advances to cover expenditures will be obtained as needed. Actual construction is, however, not anticipated before some time in fiscal year 1970. I shall continue to keep this committee informed of developments as they occur.

LEGISLATIVE PROGRAM

With the recent enactment of the Savings and Loan Holding Company Amendments of 1967, the remaining items for the Board's legislative programs for 1968 involves unfinished business rather than new proposals. Hearings on an administration measure transmitted by the Board providing for the creation of Federal savings institutions were held last July 1967. By the Subcommittee on Bank Supervision and Insurance of the House Committee on Banking and Currency. Hearings before the full committee were held in October 1967 on this legislation, which was supported by the Board and the Administration and by both the savings and loan and mutual savings bank industries. This is the bill, Congressman Boland, to which you made reference a few moments ago, sir. Subsequently, a clean bill, H.R. 13718, was reported favorably by that committee, and it is now in the Rules Committee.

Mr. JONAS. Right at this point could you give a short statement as to what this bill does?

PURPOSE OF H.R. 13718

Mr. HORNE. What this bill does primarily, Congressman Jonas, is increase to some degree but far, far short of what commercial banks can lend, the lending authority of the savings and loan institutions to put themselves somewhat more in keeping with the lending authority that is already enjoyed by mutual savings banks in those 18 or 20 States in which mutual savings banks are allowed to be chartered.

Also, this bill, if passed by Congress, would authorize existing Federal savings and loan associations to convert to the new type of institutions. The primary purpose of this additional lending authority is to provide more flexibility and more viability to the savings and loan industry so that in times of excessive inflow of money they do not have the temptation they presently have to go out and make unsound loans but could place their money in short-term instruments that could be turned over and rolled out, and this money could then be put into the housing market when there is a shortage of money as there was in 1966.

Mr. JONAS. How will they resist the temptation to invest their surplus in high yield paper and thereby diminish the opportunity to lend for house construction?

Mr. HORNE. We think from the experience of the mutual savings banks we need have no real fear there. But if there should be written into this law a requirement that a certain percentage—and the bill says 60 percent—be invested in residential mortgages, this would result in keeping money available for housing. I have heard rumors to the effect there may be amendments offered when it gets to the House floor that this be increased to 75 percent.

Mr. BOLAND. What is it now?

Mr. HORNE. It is 60 percent in the bill.

Mr. BOLAND. What do you permit them now—80 percent?

Mr. HORNE. As a practical matter, associations do keep about that percentage in mortgages.

But here again, Congressman Jonas, from the direct experience I have had sitting in this job, and the observations I have made, I am

of the opinion that this legislation would provide for a more stable industry, and that it would in the long run, over the long haul, through the peaks and valleys provide for more money for the housing industry.

And I would point out sir, in this regard, that the commercial banks have requested and have been granted by Congress, without opposition from the savings and loan industry, more and more liberal authority to get into the housing mortgage lending field. It would seem to me, not only would this legislation provide a more stable saving and loan industry and a mortgage industry, but also from an element of fairness it would indicate that there are some things in a limited way——

Mr. BOLAND. What is wrong with the stability of the savings and loan industry now?

I have been sitting here for many years and you have been bragging about it as long as I have been sitting here.

EFFECT OF H.R. 13718 ON STABILITY OF SAVINGS AND LOAN INDUSTRY

Mr. HORNE. What has happened in several regards is simply this: In the early sixties when the industry had an excess of funds, these institutions could not put their funds any place else.

Mr. BOLAND. Has this hurt them very much?

Mr. HORNE. Yes.

Mr. BOLAND. Has it hurt their growth?

Mr. HORNE. What happened in the early sixties has not hurt their growth. What I am getting at, they were reluctant to cut down on their savings and they took the excess savings for which there was not a housing market need and put it in questionable or unsound real estate investments which have now come back to plague us. This is one thing that happened.

In 1966 they did not have the short-term lending authority I am talking about. If they had the authority they could have under this bill rolled out and they would have gone back into the housing market.

So to this degree it hurt the industry. It also hurt the homebuilding industry in that the homebuilding industry and small businesses particularly in times of tight money, as we had in 1966, are the ones that almost immediately feel the burden of the stringencies of tight money. This legislation would help to prevent that situation, particularly as it regards housing.

Mr. JONAS. I cannot see how you can prevent an association, unless it is tied down by the law on its reserve, from electing if it has a surplus of funds to put those funds in commercial loans that will pay 8 or 9 percent instead of putting them in homebuilding loans that will pay 6.

Mr. HORNE. At the time when they have the excess money you speak of, Congressman, that they cannot put in, or should not put into homebuilding, because there is no need for it, they would put the money in other investments. The law would limit what they could invest in.

I would be glad to supply a list of what they can invest in. I can also supply you a list with many of the kinds of loans which commercial banks make which this bill would not authorize for these new institutions. They would be very limited as to the percentage and as to type of investments they can put their money in.

Mr. GIAIMO. Are you talking about the proposed legislation?

Mr. HORNE. Yes, sir.

Mr. GIAIMO. Is it not so, that the reason that we get periods of shortage of money in the mortgage market is because, with increased interest, and with increased diversity in the type of investment, it is more profitable for lending institution to put its money into almost any of these other activities rather than mortgages?

Mr. HORNE. No, sir; this is not the only reason. There may be many reasons.

May I ask, Mr. Chairman, that Mr. Schwartz elaborate further on some of the points I have made?

Mr. EVINS. Go ahead.

LIBERALIZATION OF INVESTMENT POWERS

Mr. SCHWARTZ. I think there is merit to your view, Congressman, but I think what the Chairman is pointing out is that in 1966 the associations were not in as good a position to compete for funds as they might have been had they had broader investment power in the early sixties.

Instead of pressing hard on the mortgage market, as they did then, and putting their assets entirely in long-term, fairly low yielding mortgages, the present bill would have permitted a more balanced portfolio, with more short-term assets and perhaps a higher average rate of return. They would have been able to compete better and supply more funds to the mortgage market in a 1966 type situation.

This is really the essential point of the liberalization of the lending power. It is not as big a liberalization as it seems when you first look at it.

It does not permit them to get far outside the residential market, but in the portion not now locked into the residential markets they are given broader investment authority.

Mr. GIAIMO. I understand that point, but you are suggesting that there is a surplus of money above that which is needed for the mortgage market.

Mr. SCHWARTZ. At times.

Mr. GIAIMO. All right. But the evidence which comes to me, quite frankly from many people in the construction industry and elsewhere, is that there is not this surplus. I understand, for example, here in Washington they are paying 2 and 3 points. This does not suggest availability of money.

Mr. HORNE. You are perfectly right in your analysis of today. But in the early sixties, if this legislation had been available, the savings and loan industry could have done nationwide what the mutual State savings bank people were able to do in certain States.

For example, in 1966 the mutual State savings banks, because they did have the lending authority we are talking about in this bill, rolled into the mortgage market considerably more money than they had on previous occasions because there was a need in 1966 for this additional money. But when there was not a need, they had put their money in the same kind of investment we are suggesting in this bill, that federally chartered savings institutions be allowed to invest in.

Mr. GIAIMO. Let me make myself clear. I am not opposed to this

legislation. I am trying to make up my mind as to which way to go. I am a bit familiar with banking, however, because my father happened to be president of a commercial bank and my observations of the banking industry in the United States, particularly the commercial banks which have all of these powers which some of these other institutions need—my observations of the history of banking is that banks, as they got broader powers, tried to get consistently greater returns on their money, which meant going out of the mortgage market and into these more attractive types of investments which give you a much greater yield than the mortgage interest gives you.

I am concerned that by opening the door to Federal savings and loans we may be penalizing the mortgage market.

Mr. HORNE. Congressman, I understand and appreciate completely your concern and this has happened in the commercial banking area in spite of the liberal provisions that Congress has granted them to get into the mortgage market. But we have several things to go by here.

In the first place, we are not giving the savings and loan industry anywhere near the lending authority that the commercial banks have.

Mr. GIAIMO. But you are opening the door.

Mr. HORNE. Only so far as the mutual savings banks have shown from experience that they do the same things that I am talking about—that is, they have invested in these short-term loans which they roll out of and get back in the mortgage market when there is a shortage of mortgage money.

CONTROL OF INVESTMENTS

Mr. GIAIMO. How would you force them to get back into the mortgage market rather than into the attractive investments, the installment loans and many of these other loans which yield more than 7 percent?

Mr. HORNE. Because of the limited areas in which they get into when they need to, and do not need to put it in the mortgage market, but which they can roll out of and get back into mortgage lending without any great difficulty.

Also, the limit set in the law below which they cannot fall so far as mortgage money is concerned. It is lower than under existing law but there still is a limit set. I do not know what Congress will or will not do, but I will not be surprised to see this 60 percent in the law go up to 75 percent.

Let me make two other points too if I may, sir. Today about one out of every eight homes bought is a mobile home and yet the savings and loan associations cannot even invest in mobile homes, but commercial banks can.

Mr. GIAIMO. Those are installment loans, are they not?

Mr. HORNE. Some of them are, but many of them are paid for over a period of time.

Mr. GIAIMO. But on an installment loan interest basis rather than a regular mortgage type of loan.

Mr. SCHWARTZ. That is correct.

Mr. GIAIMO. And is it not so that the interest on the installment type loan is much more than on the mortgage loan?

Mr. SCHWARTZ. Yes, sir.

Mr. GIAIMO. Therefore, it is much more attractive for a lending institution to get into that and thereby penalizing the mortgage market?

Mr. HORNE. But numberwise——

Mr. GIAIMO. May he answer that?

Mr. SCHWARTZ. Yes, sir; but I come back to the point I was trying to make before. If you say to the principal line of institutions, namely the savings and loan associations, that you cannot augment your income beyond that which is permitted by mortgages, then in a tight money period when you have to compete hard for funds as in 1966 or even today, they cannot get much of a flow of savings. So even if you tell them they have to put 100 percent of their inflow in the mortgage market this is not helpful if the flow disappears as it all but did in 1966. On the other hand, 60 or 75 percent of a larger flow is really meaningful.

Mr. GIAIMO. So we can understand—and again I want to stress I am not opposed to this because I think I understand some of the problems.

Mr. SCHWARTZ. Yes.

COMPETITION FOR SAVINGS IN TIGHT MONEY PERIODS

Mr. GIAIMO. Are you saying in order to make savings and loans type institutions attractive to savings depositors, you have to give them a competitive return on their deposits?

Mr. SCHWARTZ. Particularly in tight money periods.

Mr. GIAIMO. And therefore you have to find ways of making greater earnings so you can give them a greater interest rate; is that the theory?

Mr. SCHWARTZ. In tight money periods that is absolutely true, Congressman. In the easier money periods during the fifties and the early sixties, the savings and loan associations were offering a rate that the average saver could not ignore because the market just was not as competitive. Now we can see what happened in January. There was an outflow of almost $200 million and I think it is entirely associated with people not putting money into savings and loan associations or withdrawing money to get into open market securities because of a higher yield.

Mr. EVINS. Would not the Board do well to tighten up on some of these losses which are going up to $32 million with 29 problem cases? Do you not think this is where you ought to direct some of your action at this time?

Mr. HORNE. This legislation, Mr. Chairman, to which you referred gives us exactly the power to do what you suggest.

Mr. EVINS. We have given you some new powers, but have you exercised them to any great extent?

Mr. HORNE. It takes some time after the power is given to get it underway, but we are having some very good results from the Financial Institutions Supervisory Act of 1966. The holding company bill was just signed February 14.

Mr. EVINS. Are you getting more mergers to keep them from going under?

Mr. HORNE. Yes, sir.

Mr. EVINS. As Mr. Boland points out, I do not know of any industry in America that has had a more rapid growth than the Federal savings and loan industry.

Mr. HORNE. Some of the problems we have today arose during a period when money came in so rapidly when they did not need it for housing, for sound housing, and the associations had no other places to put their money.

Mr. JONAS. What did they put it in?

Mr. HORNE. Risk investments, risky real estate, and later on, had to take back real estate.

Mr. EVINS. Proceed with your statement.

ENDORSEMENT BY NATIONAL ASSOCIATIONS OF HOMEBUILDERS

Mr. HORNE. The National Association of Homebuilders who would be among those that would be most concerned about the danger you have expressed, Mr. Giaimo, and a concern which I share—and this is the reason they have endorsed this measure. I do want to say, however, that in endorsing it, they ask that the limit be raised from 60 to 75 percent, but they did endorse it.

Mr. GIAIMO. Let me say for the record finally that I probably will support this legislation because of the theory that it will make the savings and loans more competitive but I am concerned that there be a limitation on how much activity they participate in outside of the mortgage market because, they are now financing practically 50 percent of the available mortgage money.

Mr. HORNE. This past year it went as high as 48 percent.

Mr. GIAIMO. And that is a substantial factor and we must be concerned with it.

Mr. HORNE. I am in agreement with you, sir. I share your concern and I think the bill plus the proper administration by the Board will go a long way toward alleviating the dangers which you and I both are concerned about.

Mr. EVINS. Complete your statement if you will.

Mr. HORNE. We believe that the legislation would provide a more modern and viable system of thrift institution that would combine the best features of mutual savings and loan associations and mutual savings banks. Each institution would be required to be a Federal home loan bank member and to be insured by the Federal Savings and Loan Insurance Corporation (whose name would be changed to Federal Savings Insurance Corporation), except that mutual savings banks existing on the date of enactment and insured by the Federal Deposit Insurance Corporation could retain that insurance on conversion into the new type of institution.

Legislation which permits the Board to regulate dividend rates paid by savings and loan associations expires on September 21, 1968. Upon the basis of our experience to date, the Board is confirmed in its view that such authority, on a standby basis, should be available to the monetary and regulatory authorities.

I appreciate this opportunity to make this yearly review with you of developments in the savings and loan industry and in the Board.

1969 BUDGET REQUEST

Coming now to the budget estimates for fiscal 1969, the Agency's budget is a business-type budget in 3 parts, set out as follows:

Unit	Positions	Estimate
Board and staff Offices	373	$5,088,000
Office of examinations and supervision	953	14,396,000
Federal Savings and Loan Insurance Corporation	20	340,000
Total	1,346	19,824,000

It provides for an increase in overall employment over the current fiscal year of only 17 positions, all of which are in the Board and staff offices. No increase is requested in the number of positions in the Office of Examinations and Supervision but funds will be needed to fill existing positions in that office on a full-year basis, since it is estimated that workload requirements in fiscal 1969 will increase 20 man-years over the current fiscal year.

COMPARISON WITH 1968 BUDGET

The budget estimates for fiscal 1969 provides in the aggregate for an increase in funds over the current fiscal year of $1,249,000. Of the increase, $469,000 is in the Board and staff offices; $746,000 is in the Office of Examinations and Supervision, and $34,000 is in the Federal Savings and Loan Insurance Corporation. Percentagewise, there is an overall increase in positions of 1.3 percent and in funds of 6.7 percent. The 6.7 percent includes increased costs resulting from the Postal Revenue and Federal Salary Act of 1967 (Public Law 90–206).

Of the increase requested of $1,249,000, only $85,000 is required for the 17 new positions. The balance of the increase is to cover personal services and benefits for authorized personnel under the last budget, and for contractual services, supplies, and equipment. Of the requested increase, $431,000 is needed to pay for statutory within-grade increases and for increased pay costs authorized by Public Law 90–206. Another $432,000 is needed to fill current year positions on a full year basis.

The remaining $301,000 increase is in personnel benefits, contractual services, supplies, and equipment. This would be broken down as follows: $67,000 is required for increased travel expenses anticipated in connection with the increase of 16 man-years in examining savings and loan institutions; $84,000 is required for personnel benefits, and the balance of $150,000 is needed to pay for space and utilities, printing and reproduction, support services, and supplies. These increases are offset by $8,000 additional reimbursements estimated to be collected in fiscal 1969.

You may wonder about that small amount. As I have said before, we have an agreement with AID by which they compensate us for, so far as a couple of people are concerned. This is where this $8,000 would come from, if it comes.

As the figures submitted indicate, the increase in our estimates for fiscal 1969 over our 1968 authorization is due substantially to built-in

increases over which we have no control and to filling positions on a full-year basis.

It is my sincere judgment that, consistent with our statutory responsibilities, the budget estimates submitted represent the minimum amount necessary to carry out our functions effectively.

INCREASES IN STAFF

I have previously indicated that we are seeking 17 new positions. Since nine of these positions are requested to serve the needs of two of the Board's offices, I should like to explain to the committee the special problems of these two offices.

One of these offices is the Office of Applications headed up by Mr. Clarence Smith. We are requesting two financial analysts, grade GS–12, and two clerical employees for that Office. Through it are channeled every type of application coming to the Board, and by a series of developments to which I shall briefly allude, the work and scope of duties of that Office have greatly expanded. Several types of applications handled by that Office are becoming increasingly complex. New procedures have been adopted to assure equitable treatment of all parties. Most recently, additional duties of a significant nature have been assigned to the Office.

NEW WORKLOAD IN OFFICE OF APPLICATIONS

A few examples may be helpful. During the past 2 years, insured associations have been giving increased attention to mergers. To discharge adequately its responsibilities in passing on mergers, the Board, after considerable study, adopted in early 1967, a detailed policy statement covering the areas to be analyzed in connection with mergers, and the criteria to be applied in considering such applications. For the Board to pass upon mergers, it is essential that the analysis be comprehensive and cover many areas of concern. Although several offices of the Board are involved, the primary responsibility for analysis, coordination, and submission of recommendations to the Board falls on the Office of Aplpications. Additionally, during the year, the Board decided to entertain applications for mergers of permanent stock institutions into mutual associations. Such applications had been deferred since 1963. If anything, such applications are even more complex than the usual merger applications, all of which have added to the work of this Office.

During the year, the Board approved a new procedure for the processing of applications for insurance by State-chartered institutions designed to afford equitable treatment to all parties. This new procedure imposes on the Office of Applications the duty of complying substantially with all procedural steps, including the scheduling of hearings, participation by analysts in public hearing procedures, and preparation of formal notification of decisions.

Among other new duties assigned to that Office were those authorizing the processing of applications for two new types of facilities, mobile branches and service corporations. By regulation, the Board has authorized the establishment of mobile facilities by Federal associations in communities not warranting full-scale branch operations.

Processing applications for such facilities involves all the intricacies and details of processing an application for a branch office, including public notification, the scheduling of hearings, and detailed analyses of such applications for Board consideration.

As a result of congressional action, Federal associations were authorized to participate in so-called service corporations. The Board published regulations approving service corporations performing certain specified functions, and for proposed service corporations performing other functions, special Board approval, upon application, is required. A policy statement of the types of functions which it is contemplated that service corporations may perform has been published after considerable study of the matter. The processing of applications under the service corporation regulations, and compliance with the policy statement of the Board, falls in large part on the Office of Applications. Also, that Office has the responsibility for testing the criteria established, evaluating new types of functions proposed for such corporations, and recommending changes to the Board.

To help the Office of Applications cope with these activities and responsibilities, it is essential that it be permitted to obtain the needed personnel. The importance of adequate personnel in this area cannot be stressed too greatly. The Board, in the final analysis, has to rely on the content and quality of the reports and recommendations prepared in that Office in making important and significant determinations.

STAFFING PROBLEMS FOR OFFICE OF FHLB OPERATIONS

The Office of Federal Home Loan Bank Operations is another of the offices whose staffing problems are a matter of special concern to us. This is the Office that coordinates and supervises the operations of the 12 Federal home loan banks, whose assets of $7.1 billon are double those of 5 years ago. By way of comparison, the present staff of 15, including six clerical employees, has been increased by only four employees during that 5-year period. Even more significant than the increase in assets, has been the marked increase in the degree of complexity in the day-to-day supervision of the 12 banks. Five more positions for this Office consisting of two systems accountants, one financial analyst, and two clerical employees, have been requested to meet the workload requirements for fiscal 1969.

While Mr. Lyndon R. Day, the Director of that Office is present to answer any questions concerning his area of responsibility, the Board has in the last few years involved itself deeply in developing policy for the guidance of the bank system in the extension of credit to its members. My earlier remark concerning the buildup in liquidity in the bank system to provide a cushion for credit in the event the mortgage market should again become tight, is a further illustration of Board concern in this area.

The eyes and ears of the Board, so to speak, in carrying out and policing such policies, is the Office of Bank Operations.

That Office has the responsibility of advising the Board whether there has been conformity by the respective banks with all Board policies relating to credit, and whether the evaluation procedures for the determination of credit worthiness are carried forth in the prescribed manner. In short, there has been a shift from a quantitative

to a qualitative policy in the extension of bank credit, and as a consequence, the review and supervision of bank operations has become a more complex and detailed operation.

I am informed by Mr. Day, that with all of the many duties assigned to his Office, he has been unable to take employees away from their assigned tasks to develop further procedures and recommendations to the Board to carry out more effectively bank operations to meet the increasing demands upon the bank system. For example, the addition of two system accountants at grades 12 and 11 would enable that Office to study the detailed operations of each of the 12 banks and develop standardized accounting and operating procedures. The payoff by the addition of these two positions would be coordinated activity of the 12 banks, improved efficiency of operations, better supervisory control mechanisms, and more reliable and prompt information to the Board.

There is an urgent need, also, to undertake an immediate study of the corporate management of the regional banks, ranging from the variety of officers and duties assigned to such officers to a comprehensive analysis of the functions of each board of directors. We think such a study should encompass not only procedural matters, but also substantive matters to which directors' deliberations should be directed. This study should also consider the variety of committees and duties assigned to them by the several banks. The more efficient the corporate organization of these banks, the more effective their operations. To do this, we need an additional person, a financial analyst, grade GS–13, to make a comprehensive study and evaluation, and to make recommendations to the Board, including some kind of unifying qualitative standards. The addition of such an employee, would in our view, not only improve the organization of the 12 banks, but provide an understudy to the present financial analyst, GS–14, to give management depth in a highly sensitive area.

PERSONNEL NEEDS IN OTHER BOARD OFFICES

While I have taken the time to comment in some detail on the needs of these two particular offices, I do not mean to suggest that the remaining eight positions requested are in any manner not worthy of serious consideration. It seems to me that the justifications set out in our budget estimates explain amply the need for the other eight new positions requested. Our staff officials who accompanied me here today would be pleased to answer any of your inquiries in respect to any of their operations, personnel requests, or any other matters of interest to you. I want to make clear that in the preparation of our budget estimates the needs of each office and division were evaluated most carefully and our submission represents the minimal amount we feel necessary to do the job entrusted to us.

I wish to thank you gentlemen for having afforded me this opportunity to discuss our personnel needs.

Mr. EVINS. Thank you, Chairman Horne. That is a very comprehensive statement. It is a good report on the problems, on your growth, and on your needs.

Mr. Chairman, you indicated that the 12 banks have grown to $7.1 billion in assets, double what it was 5 years ago. I would think with

such growth there certainly should be adequate and proper supervision, but then elsewhere in jour justification you say that although the banks have the authority to borrow from the Treasury, that they have never exercised that authority. You have statutory authority for the banks to draw on the Treasury when needed, but throughout the years they have never exercised that authority; is that correct?

Mr. HORNE. That is right.

GROWTH OF FEDERAL HOME LOAN BANKS

Mr. EVINS. Where do the banks raise this money for this $7 billion growth?

Mr. HORNE. Most of it has come from having gone to the market and sold paper, consolidated obligations, to make advances to their member institutions.

Mr. EVINS. Can each bank sell additional stock?

Mr. HORNE. We do it this way—it is not stock that I am speaking of now. It is money that we raise in the market, like the Treasury raises on its bonds in the market. We in our 12 banks, in turn, loan to their association money to get into the housing market or to meet certain withdrawal demands.

Mr. EVINS. Can an individual bank increase its capital structure or do they all increase simultaneously in the same amount?

Mr. HORNE. It varies in accordance with the needs of the members of the particular bank involved.

Mr. EVINS. According to the region?

Mr. HORNE. The region; yes.

Mr. EVINS. Is it done by two methods: selling to the savings and loan associations and public subscriptions?

Mr. HORNE. Well, that is true to this extent. Every member of each of these 12 banks has to be a stockholder and the member does buy stock in the bank, and that amount of stock is determined by the amount of residential mortgages the member has. So as its mortgage holdings increase, its stock contribution or stock purchases will increase.

Mr. EVINS. Have the loans brought about the growth in the banks?

Mr. DAY. The increase in capital stock does not finance very much of our operation at the present time. We are dependent almost entirely upon the open market for the sale of consolidated obligations of the 12 Federal home loan banks. We go to the market every month for varying amounts of funds in order to provide the moneys to make advances to our members.

Mr. HORNE. As a matter of fact, of this $7 billion assets we are speaking of, $4.4 billion of it is in the form of advances.

Mr. EVINS. When the Federal home loan banks were started in 1932 the Government advanced funds, but now the Government's interests have been fully paid off.

Mr. HORNE. Yes, sir.

Mr. DAY. By 1951: $125 million.

FLOW OF SAVINGS INTO SAVINGS AND LOAN INSTITUTIONS

Mr. EVINS. Mr. Chairman, you spoke earlier about the money inflow being down. How do you build up the money inflow into the banks, Mr. Day?

Mr. DAY. May I pass on that, Mr. Chairman, as being outside of my area?

Mr. HORNE. The money inflow is down and the savings and loan associations dropped off pretty sharply in the last month or so, although it has not reached near the intensity that it did in 1966. One thing that is happening is that we have had a tighter money situation. And we do not know how severe disintermediation is going to be. These institutions get that money from three different sources. Primarily they get their money from people who come in from the street and open up savings accounts.

Mr. EVINS. They advertise extensively in the press and on television.

Mr. HORNE. Yes, sir.

Mr. EVINS. Do you restrict the amount of their offers for new accounts?

Mr. HORNE. We restrict them to items that do not cost more than $2.50 that they can offer a person who is opening up a new account.

Mr. EVINS. A loan association can attract more capital into it.

Mr. HORNE. This is one of the techniques they use to induce people to open up savings accounts with them. Now, as people who are saving money or people who have already put money into these associations see sources where they can use this money and get a bigger return, naturally some of them do so regardless of what that investment might be. This is one of the reasons why this savings inflow has dropped.

Mr. GIAIMO. You were starting to detail the three sources.

Mr. HORNE. Yes. One source is off of the street. Another source is people who have savings there and, as they receive dividends, they frequently keep those dividends in the associations. The third source is borrowing from our 12 banks. We at the Board level will go to the market and sell paper as we clear it through the Department of the Treasury, just as the Treasury will sell its own paper. We make estimates as to how much money we need based on inquiries that we made to the 12 banks and inquiries that they in turn have made of each of their members. Based on this total composition of need, then we go to the Department of the Treasury and ask for permission to go to the market and sell paper to raise money. Other agencies such as banks, the Farm Credit Administration, about nine Government agencies in total, do this sort of fundraising in the market.

FACTORS AFFECTING RECENT DECLINE IN SAVINGS

Mr. GIAIMO. Can you enlighten us on the factors which bring about this restriction in mortgage savings in the last month or two?

Mr. HORNE. Mr. Schwartz could do that perhaps in more detail. Part of it is the tightening of money. Do you have some comments on that?

Mr. SCHWARTZ. Yes. Through the summer of last year, the flow of savings to the mutual savings banks and the savings and loan associations was very favorable. In the fall it began to taper off. In the last quarter it dropped off very sharply. In January it was quite unsatisfactory.

At the same time, once you began to get this decline in savings in the early fall, that is when your interest rates began to rise when the pressures on banks and insurance companies for additional commercial loans began to grow. The insurance companies and commercial banks have been shifting further away from the home loan market; the savings and loan associations and mutual savings banks were somewhat less able, as a result, to take care of the demand. You have had an increasing tightening of the market since late summer and it has become particularly pronounced in the last couple of months. The savings and loan associations have kept their forward commitments at an alltime high despite this decline in savings because, I suspect, that they expect the programs that the chairman mentioned which the bank system is maintaining, to help them to meet this.

The Board has not discouraged them from maintaining this high level of commitments. Nevertheless, the savings and loan associations and mutual savings banks together have somewhat more than 50 percent of the market, but with the other part collapsing on top of them they face a very difficult situation.

Mr. GIAIMO. Are the CD's playing a role in the tightening of the money situation this time?

Mr. SCHWARTZ. Not so much the CD's. I think most of it is nonbank, nonsavings and loan type investments. In some areas we are running into difficulties not with the CD's but with the golden passbook account. Where the associations do not have the income to take advantage of all the tools the Board has provided, the commercial banks come in with a golden passbook and are able to attract funds away from the association. It has not reached the dimensions that it did in 1966 but this is one of the problems that confronts them.

USE OF GOLDEN PASSBOOK BY COMMERCIAL BANKS

Mr. GIAIMO. Would you explain what the golden passbook is?

Mr. SCHWARTZ. It is really a device that gives the banks a legitimate way to avoid the 4-percent ceiling on passbooks. The golden passbook provides——

Mr. GIAIMO. A time deposit?

Mr. SCHWARTZ. You get a time deposit open account subject to 90 days' notice and you get 5 instead of 4 percent.

Mr. HORNE. They have very intelligently or shrewdly called it a passbook because the S. & L. passbooks most often, with few exceptions, bears 4½ or 4.75. So the banks call theirs a passbook at 5 percent. So the saving public is not always or is seldom sophisticated enough to know the difference. So he buys a so-called passbook at a bank which is really a CD, called by another name.

Mr. GIAIMO. That is what I was going to say. Isn't that golden passbook really a CD?

Mr. SCHWARTZ. It has one characteristic difference from a CD. In the CD you have a fixed term of 3 months, 6 months, or 9 months.

Here it is an open-ended deal. You put the money in and you have to give 90 days' notice to withdraw. The penalty for withdrawal is really minimal if you wait until after an interest date because any interest that has been credited or paid to you, you cannot be penalized. So if you come in, let's say, on April 5 and you have received a dividend credit or an interest credit on March 31, you give up 5 days' interest. It is a little bit more flexible in that regard than the CD. Also, the banks put somewhat higher limits on CD's than they put on the golden passbook for reasons best known to themseles. They argue that there is a cost differential here. In any event, this is one of the problems but it is not the most significant problem.

Mr. HORNE. It is spotty.

Mr. SCHWARTZ. It is clear that the loss in savings in January that the savings and loan associations had was not accompanied by a comparable growth in the golden passbook. It was in the larger accounts which were likely to go to the open market.

Mr. EVINS. Does the Board know what the reason is for these large losses in January?

Mr. JONAS. Where did the money go?

Mr. SCHWARTZ. The money went into the open market to buy short-term Government securities, long-term Government securities or corporate bonds.

Mr. HORNE. You see, one of the things that we and the banks have to worry about, so far as savings inflow is concerned, are corporate issues or other areas for investment other than in banks or savings and loans.

Mr. JONAS. Didn't the Treasury issue some notes paying 5.7 percent recently?

Mr. SCHWARTZ. Yes.

MARGIN OF LIQUIDITY IN BANK SYSTEM

Mr. EVINS. What is the margin of liquidity in the bank system? You testified some time ago on that. Is the margin proper?

Mr. HORNE. From a liquidity standpoint, we think so; yes, sir. We have to think of liquidity and also of reserves. From a liquidity standpoint both within the associations themselves and with the bank system, we are in a better condition by far than we were at the beginning of 1966.

Mr. EVINS. Very good.

Mr. HORNE. The associations, as the money inflow began to be favorable in 1967, along with the housing drop that occurred in 1966 which had not yet recovered were able—and they took our advice, fortunately—to improve their liquidity position beyond the level demanded by the statute. So this is where we get the approximately $2.6 billion in liquidity. That is beyond the 7-percent liquidity that we require under the statute. Then we have in the system on top of that, the other figure that was mentioned, the $1.8 billion. Now, that is the liquidity within the 12-bank system, where by rolling over money as the paper came due, we built up liquidity to $1.8 billion.

Mr. EVINS. The report this year is that the institutions and banks generally are in a more liquid position than they were a year ago.

Mr. HORNE. Yes, sir.

Mr. EVINS. Last year it was rather dour and distressing.

Mr. HORNE. Yes, sir.

Mr. EVINS. But you give a sounder report this year.

Mr. HORNE. That is right. What bothers us are the matters I explained earlier.

Mr. EVINS. We commend you for coming out of the hole into a more healthy climate within a year.

INFLOW OF SAVINGS IN JANUARY

Mr. JONAS. You may have answered this before. On a seasonally adjusted basis, what was the net savings inflow in January?

Mr. SCHWARTZ. If you take it on a seasonally adjusted basis it would amount to $4.8 billion per year.

Mr. JONAS. That compares with $10.7 billion in 1967 and $3.7 billion in 1966.

Mr. SCHWARTZ. Yes, sir. We hope to do a little bit better than 1966.

Mr. JONAS. Closer to 1966 than 1967?

Mr. SCHWARTZ. Yes, sir.

Mr. HORNE. Yes, sir. This also includes the dividends that were left in, that many of the savers left in.

Mr. JONAS. Frankly, I don't see how the savings and loan industry expects to continue to attract savings, or the savings banks either, when you can, as was already said buy a Government note, a U.S. Treasury note that will pay 5¾ percent interest.

Mr. SCHWARTZ. We are fortunate that not all people have the same taste or have the same range of choice.

Mr. JONAS. Or the sophistication.

Mr. SCHWARTZ. Well, there are people who are large investors who have small savings accounts in savings and loan associations or in banks that they add to willly-nilly simply because it is their quick, ready money for various things such as vacations or major purchases.

Mr. JONAS. I would like to keep interest rates as low as possible. I have always been a borrower. I am a heavy borrower now. I don't like to pay more interest. But at the same time, if I have to have some money I am not going to quibble too much over paying the going rate of interest.

With the Federal Government setting the pace and increasing rates of return on Government securities, I don't see how you can hope to hold these homebuilding institutions and savings and loan institutions down.

Mr. HORNE. We are in a dilemma, and you put your finger on one of our dilemmas. As the Federal Government raises money it also has to meet the market demand, even Treasury, because when the corporate issues, like United States Steel, go into the market——

Mr. JONAS. This thing feeds on itself.

Mr. HORNE. To some degree, yes. Now, this is the position we are in, this is one reason we would like to have more flexibility, which I spoke of earlier, when we were discussing H.R. 13718.

Mr. JONAS. If you could pay more interest on savings, that would help solve your problem.

Mr. HORNE. Our dilemma now is that if we don't meet the competition elsewhere we don't have the inflow that we need and we even have

an outflow. But, on the other hand, if we raise the rates so that they do meet competition, because investments of savings and loan associations are in long-term mortgages and frozen in for a long period of time, it puts them in more of a profit crunch. So if they don't raise the rates they don't get the savings, and if they do raise the rates they may operate in the red. This is one of our real problems, one of our serious problems.

Mr. EVINS. Mr. Chairman, Congress has given you new legislation and new authority. Does your counsel or you want to capsule for the record just what these authorities are?

Mr. HORNE. Yes, sir.

CEASE-AND-DESIST AUTHORITY

Mr. EVINS. We gave you some injunctive authority, cease-and-desist authority.

Mr. HORNE. Prior to 1966 the only real supervisory authority we had over a State-chartered, federally insured association was either persuasion or to put it out of business by canceling the insurance. Believe me, to have to wait until you have to reach the stage of canceling insurance is a long, tedious road and the institution could be completely ruined by that time. Insofar as federally chartered associations were concerned the situation was equally difficult. So in 1966 you gave us what we call intermediate authority. We can issue cease-and-desist orders and we can remove, under certain conditions—very restricted conditions, more restricted than we asked—but we still can do it under certain restricted conditions, replace directors or management that is ruining an association. Additionally, you required that when a change of directorship or ownership takes place, or a change of management takes place, that we have to be advised about it. This is what you did, briefly, in 1966. The bill that you just passed in 1967——

HOLDING COMPANY LEGISLATION

Mr. EVINS. The Holding Company Act?

Mr. HORNE. Yes. The Holding Company Act was signed February 14. That bill primarily enables us to get at the holding company itself. Heretofore, even though the Federal Reserve Board has had supervisory authority over bank holding company operations, we have not had supervisory authority over savings and loan holding companies. You gave us the authority in this new bill to examine savings and loan holding companies, to have them report to us information which we seek. You gave us the authority to have some control over how they have been using their subsidiary associations in the past, also over conflict of interest and self-dealing. You also gave us authority to restrict the degree to which they can go out and get involved in heavy debt, then make their insured subsidiary savings and loan associations carry that debt. One of the biggest problems we have had with savings and loan holding companies is that they have ruined their associations by making them carry indebtedness incurred in a speculative manner by the holding company itself. In other words, you have a holding company controlling a satellite savings and loan institution which also controls other satellites of different types, but when the holding company gets into difficulty, in order to carry its debt, it milks

this satellite savings and loan association. You gave us authority under this new act to put many restraints in the manner in which holding companies have been doing these things in the past.

Mr. EVINS. Is that restraint imposed on the savings and loan association?

Mr. HORNE. It is imposed on the holding company itself.

Mr. EVINS. You have not had much experience or activity in that field, though you have the power?

Mr. HORNE. We have the power now to get into it.

Mr. EVINS. When were you given the power to make affiliate investigations?

Mr. HORNE. That was done in 1966.

Mr. EVINS. To what extent have you exercised this authority?

Mr. HORNE. As I explained in my testimony, we examined, I believe, 39 already and we plan to examine approximately 200 more in the remainder of this fiscal year.

Mr. EVINS. What is the nature of your affiliate companies?

Mr. HORNE. Insurance companies, construction companies, title companies, escrow companies.

Mr. TREVAS. The things that sort of feed into a savings and loan operation.

Mr. EVINS. Do you find any instance in which Federal banks have influence or control, or common directors?

Mr. HORNE. Yes, sir; we have instances of that. We control that to the best that we can. We don't find a great degree, numberwise, of instances of abuse Mr. Chairman, but we have found some.

Mr. EVINS. There is nothing in the act to prevent you or preclude you from investigating in this area.

Mr. HORNE. No, sir; and we are doing it.

Also let me emphasize here that when we have found something that is going on between an association and a bank, so far we have had no difficulty at all getting the cooperation from the bank regulatory authorities.

Mr. BOLAND. You anticipate examining 500 affiliates in the 1969 budget. How many affiliates are there?

Mr. WALTERS. I don't think anyone really knows.

Mr. BOLAND. Would it be in the thousands?

Mr. WALTERS. No. We are guessing roughly a thousand or two, but this is all guesswork. We just don't know based on the present definition of an affiliate. We are looking into it in connection with each examination. It will probably be a year or so before we know how many affiliates there are under the present definition.

Mr. BOLAND. That is a pretty good ratio, 500 to 1,000 examinations, if you say there are about a thousand.

EXPIRING DIVIDEND REGULATION AUTHORITY

Mr. EVINS. You made reference to the dividend regulation authority expiring. Tell us about the mechanism of regulating dividends.

Mr. HORNE. We had the benefit of some previous experience by the Federal Reserve Board in its Regulation Q authority that was of some help. But in 1968—you gave it to us in 1966 and it was renewed for one year in 1967, and we will be asking that it be renewed.

Mr. EVINS. You have had it in operation for about 1 year.

Mr. HORNE. Since September of 1966, sir. I am trying to answer your question as succinctly as possible. We have far more difficulty in applying this than the banks have had because when we got the authority there were so many patterns that had already been established all over the country, from California clear on across to all areas of the country, that when we move toward a uniform rate, which the banks have always had, we had to do it moderately.

Mr. EVINS. You cannot have a uniform dividend rate. Some institutions are very profitable and they can declare a big dividend. Others are marginal and it is not sound, maybe, to declare a large dividend.

Mr. RAND. It is a ceiling.

Mr. EVINS. You have a ceiling?

Mr. HORNE. It is a ceiling which we set. You can go below that ceiling, and some do. We have set a ceiling applicable to all, but it varies from one part of the country to another.

Mr. JONES. Are you talking about interest?

Mr. HORNE. They call it dividends in the savings and loan associations but it is analogous to the interest on savings paid by banks.

Mr. JONAS. So you would have to pay that whether the institution is in bad shape or not?

Mr. HORNE. That is one of our problems.

Mr. JONAS. That is a liability that is insured, is it not?

Mr. HORNE. Let me tell you an interesting thing about that. So far as savings and loan associations are concerned, it is an anticipated payment. For all practical purposes it does work out as being a requirement that has to be met.

Mr. EVINS. Since some of the people allow their dividends or interest to be reinvested in their accounts, it is not all paid out.

Mr. HORNE. But it still has to be credited, paid by the association, whether paid directly to the saver or credited to his account.

Mr. GIAIMO. Technically, under the law, it is not obligatory that the association pay the interest because it is dividends in a savings and loan such as is the case with a participating mutual holder.

Mr. TREVAS. Exactly.

Mr. HORNE. You are correct in your analysis. This is the reason we use the word "anticipated" rate.

Mr. JONAS. I don't quite understand. I thought that was a liability of the institution just as the principal is.

Mr. GIAIMO. No. It is not.

Mr. JONAS. Doesn't the institution obligate itself for that?

Mr. GREENEBAUM. Not until it earns it.

Mr. GIAIMO. It is like a dividend you get in any mutual venture, such as a mutual insurance policy, where the rate is determined by the earnings of the company. Isn't that the theory?

Mr. HORNE. Yes, sir.

Mr. GIAIMO. That is what distinguishes it from pure interest.

Mr. HORNE. Yes, sir. But I want to stress again that for all practical purposes it is treated as an obligation and is paid.

Mr. JONAS. If an institution folds and you have to take it over, you the insuring corporation, is it a liability that you have to pay?

Mr. HORNE. It is not always a liability to pay the dividend, but it is to pay the principal.

PARTICIPATION IN HOUSING NEEDS FOR SLUM AREAS

Mr. EVINS. How does the Federal savings and loan association plan to participate in solving the lower income housing needs in the slum areas?

Mr. HORNE. Mr. Chairman, that is a good question, a very good question. I frankly don't have the complete answer. We are giving it a lot of careful study. We have to keep in mind at least two requirements when we urge the savings and loan industry—which I think it can—to make investments in this area. We have to keep in mind that the money they put into these areas would be underwritten the same way that other private industry money is usually underwritten, and that is by FHA or some other form of Government insurance, VA for example. We have to bear in mind that the money they put into these areas draws to a reasonable degree an income that is greater than what they have to pay for the money that they put into these areas.

Mr. EVINS. These are high risk areas, and the soundness of your system might be in jeopardy.

Mr. HORNE. Unless we carry through on at least these two positions that I have expressed, then your statement, sir, is correct. The Board has refrained, and I think wisely so, from encouraging associations to get into these areas unless the loans do meet these two requirements, for fear that the risk would be greater than the insurance corporation or the individual associations themselves could bear. But within these two areas I think that we are going to be able to participate in these housing programs for the underprivileged. Put it this way, we are working closely with the housing authorities.

Mr. EVINS. To make a contribution and to participate in financing, as much as possible?

Mr. HORNE. Yes, sir; yes.

POSITIONS SHOWN IN BUDGET FOR 1968 AND 1969

Mr. EVINS. Mr. Chairman, regarding your appropriation and your employment, the figures in your budget and that of the President do not jibe completely. In 1968 you are asking for 356 jobs and the budget showed 335.

As an average, you are stating 338 and the budget showed 324. In other words, the budget was less in 1968 than you requested and received. Now, the budget for 1969, according to your justification you are asking for 373 jobs, an increase of 17, while the budget says 351, which is an increase of 16. So you are not far apart, but your figures do not jibe.

Mr. CALLAHAN. May I comment on that, Mr. Chairman?

Mr. EVINS. Yes.

Mr. CALLAHAN. The difference between the 356 and the 335 which you referred to in 1968 represents 21 positions in our reimbursement program. These positions are involved in the AID program which the chairman referred to, and in our printing and reproduction plant, where services are performed on a reimbursable basis, primarily within the Board itself but, nonetheless, they are in an advance and reimbursement schedule. These positions by Bureau of the Budget instructions are shown in a separate schedule.

As I said, the 335 and the 21 would make the 356 positions that we are referring to in our overall schedules for 1968. In 1969 the same thing applies, we have 351 in the basic limitation and 22 in the advances and reimbursement schedule. So this would make up the total of 373 positions requested.

ESTIMATES FOR OFFICE OF INTERNATIONAL HOME FINANCE

Mr. EVINS. You have an Office of International Home Finance.
Mr. CALLAHAN. Right.
Mr. EVINS. Five jobs?
Mr. CALLAHAN. Five.
Mr. EVINS. You estimated $63,000 in net salaries.
Mr. CALLAHAN. Yes.
Mr. EVINS. Are these to assist AID in encouraging homebuilding in South America?
Mr HORNE. Yes, sir.
Teaching them also how to set up savings and loan associations and thrift institutions.
Mr. EVINS. Can't they come here and help our balance of payments by learning our system here?
Mr. HORNE. That is what they do.
Mr. TREVAS. A great deal of it does come to the Board.
Mr. EVINS. Is this expenditure outside of your limitation?
Mr. CALLAHAN. It is outside the limitation we have asked for.
Mr. TREVAS. We get reimbursed.
Mr. HORNE. We get money from AID, but it is counted in as part of our budget.
Mr. EVINS. When was this office set up?
Mr. HORNE. It was set up in 1965.
Mr. EVINS. We are asking all the agencies to see if they can make any contribution, even minor, in the balance-of-payments situation. Have you an outflow of money in your budget?
Mr. HORNE. No, sir.
Mr. TREVAS. No, sir.
Mr. CALLAHAN. No, sir.

POSITIONS REQUESTED FOR 1969

Mr. EVINS. For 1969 you have budgeted for 373 jobs and the budget is for 351, which is a difference of 22.
Mr. CALLAHAN. Twenty-two positions are in the advances-and-reimbursement schedule.
Mr. EVINS. Now, for 1969 you budgeted for 351 jobs and you estimated average employment of 343.
Mr. CALLAHAN. In addition to the 351 positions, 22 other positions are shown in the advance-and-reimbursement schedule. The average employment figure of 343 includes 6 man-years which represent temporary and summer employment.
Mr. EVINS. In your examinations, the budget shows an increase of jobs over what you are showing. On the other figures the budget is lower, but in this figure the budget shows more, 869, whereas you are asking for 864.

Mr. CALLAHAN. We are speaking there of man-year requirements.

Mr. EVINS. In the Examination Section?

Mr. CALLAHAN. Yes. The 864 represents man-year requirements out of a total of 953 positions.

Mr. EVINS. For 1969 you are asking in examinations for 953 jobs and the budget shows the same, but the man-years is different.

Mr. CALLAHAN. The man-years would be 884.

Mr. EVINS. The budget shows 889.

Mr. CALLAHAN. The difference between the 884 and 889 represents temporary and summer employment. In other words, this difference is the equivalent of full-time employment of temporary employees and students who are employed by the Board in its summer program.

STAFF OF FSLIC

Mr. EVINS. Mr. Chairman, when I was looking over your Federal Savings and Loan Insurance Corporation budget I was impressed by the fact that you have insurance protection of $135 billion, and you have about 19 jobs. That is the biggest insurance company in the world for the number of employees running it.

Of course, we know a few years ago you had a staff and you transferred them all under the Administrative Department. They draw on the services, bookkeeping, accounting, and other resources of the Federal Home Loan Bank Board staff.

Mr. HORNE. You are exactly right, sir. That is a very important point. I would like to, if I may, brag about Mr. Jerry Worthy and his staff.

Mr. EVINS. The biggest insurance company in the world for the least number of employees.

Mr. HORNE. Your explanation is to the point. That is the reason they do not have to have lots more people.

Mr. EVINS. You have them covered up.

Mr. HORNE. No, sir. If they need legal help, for instance, they go to Mr. Moscov; if they need the services of Mr. Day, they go to him, and if they need the services of the others——

Mr. EVINS. But if you need money you come to Congress.

Mr. HORNE. Yes, sir. We come to Congress and ask for permission to spend the money that the system generates. No public funds at all are involved, not one penny.

Mr. EVINS. It is a pretty good insurance company. You have a lot of friends and resources to draw upon.

Mr. HORNE. Well, it is. It makes, I think, for a better operation and at less cost.

Mr. EVINS. You are asking for a $34,000 increase for the insurance corporation. And you say this is because of the Pay Act?

Mr. HORNE. Yes, sir.

INCREASE IN FUNDS FOR BOARD

Mr. EVINS. You are asking for a $461,000 increase for the Board. Part of that is the Pay Act and part is for new employees.

Mr. HORNE. A great part of it is the Pay Act, sir. You see, only $85,000 is required for the new positions; 17 new positions we are asking for.

Mr. EVINS. The balance is the Pay Act costs.

Mr. JONAS. I was going to ask about that. I noticed this in your statement. However, that would not be more than an average salary of around $5,000.

Mr. TREVAS. First of all, we figure on six-tenths of a year basis. It is going to take us time to recruit these people.

Mr. JONAS. You don't expect to put them all on?

Mr. TREVAS. The Bureau doesn't even allow us to.

Mr. JONAS. On an annualized basis it would be more than that because your average salary is higher than that.

Mr. HORNE. This amount would be more if they had hired these people. Their payment later on down the road would be more. But for this fiscal year, this is what we are talking about.

INCREASE IN SYSTEM MEMBERSHIP

Mr. JONAS. Is it correct that you don't expect to bring in more than five new institutions into the system in 1969?

Mr. HORNE. Five new institutions?

Mr. JONAS. That is your estimate.

Mr. HORNE. Yes.

Mr. JONAS. How did that compare with last year? Is it running around five per year?

Mr. SMITH. We have a schedule in here showing the increase.

Mr. JONAS. Is this more or less than the average?

Mr. SMITH. Of course, what affects that figure so much is the number of mergers. These are net figures. The fact that there is an increase of five or 15, it could have been 20 or 25 new associations entering into the business, but we lose some because of consolidations and withdrawals from membership in the bank system.

Mr. JONAS. When I saw that five figure I began to wonder why you needed more people.

Mr. SMITH. Mergers is one of our big operations, one of the most difficult applications we have.

Mr. HORNE. Also this has a bearing: we are having to do more things—now, I am not being critical, I am in favor of the Administrative Procedure Act and the further revelations being required, which we are being required to make under the laws recently passed by Congress—but this does increase our workload in meeting the requirements of disclosure, requirements of making available to the public information that Congress tells under the new act we should make available.

Mr. EVINS. The Federal Home Loan Bank Board is a Government corporation, it is self-sustaining. You use your own revenues, which come in from examinations of institutions. So you have an administrative expense and a nonadministrative expense. Your administrative expense is for the Board and its staff. The nonadministrative relates to the examination of your institutions. Is that correct, Mr. Chairman?

Mr. HORNE. Yes, sir.

ORGANIZATION CHART OF FEDERAL HOME LOAN BANK BOARD

Mr. EVINS. Gentlemen, take a look at the organization chart No. 1 and the page 162. These will give you a picture; 162 is near the back.

The organization of the Home Loan Bank Board is shown on those sheets. The Chairman has an assistant and there are assistants to the other Board members, and an executive assistant to the Chairman. Then you have the office of the Federal home loan bank operations which supervises the Federal home loan banks. There are 12 of those.

Mr. HORNE. Yes.

Mr. EVINS. Then this chart on page 162 shows your district offices. Do these correspond with your 12 banks?

Mr. HORNE. Yes, sir; these are the 12 banks.

Mr. EVINS. Boston, New York, Pittsburgh, Greensboro, Cincinnati, Indianapolis, Chicago, Des Moines, Little Rock, Topeka, Los Angeles, and Spokane. You have a lot of activity on the west coast. You have two offices out there.

Mr. TREVAS. San Francisco and Los Angeles.

Mr. HORNE. Los Angeles is really a branch office of San Francisco.

Mr. EVINS. The two main functions are the Office of Examinations and Supervision, and the Savings and Loan Insurance Corporation—well, there are more than two but you mentioned those two.

Mr. HORNE. Yes, sir. We also have another main function. Our other main function is the chartering of associations and working with the mergers which Congressman Jonas referred to earlier.

STATEMENT OF SOURCES AND APPLICATION OF FUNDS

Mr. EVINS. Take a look at the table on page 3. This is how the funds are applied. Now, the administrative expenses go up from $4,686,000 to $5,153,000. Just a few years ago it was $4,100,000.

Your nonadministrative expense goes up from $11,801,000 to $13,401,000. This is for examinations. All of this is the use of funds received as fees for examinations.

Mr. HORNE. Yes, sir.

Mr. EVINS. Then you show conservatorships, you estimate nearly $1 million, actually $794,000.

Mr. TREVAS. By law, these are nonadministrative funds out of earnings. You cannot anticipate them in advance.

Mr. EVINS. You have an increase in Treasury cash of $769,588. Tell us about this.

Mr. CALLAHAN. Mr. Chairman, this is our estimate of the additional cash we expect to have on deposit with the Treasury at yearend.

Mr. EVINS. This is funds on deposit with the Treasury.

Mr. CALLAHAN. Right; an increase, one yearend over the other.

Mr. EVINS. Two years ago it was $158,000.

Mr. CALLAHAN. Right. This is the result of estimating payments for expenses incurred and the receipt of collections on examination fees and other sources of revenue that we have.

Mr. EVINS. Look down here to "Funds provided by financing." You go down from $5,200,000 to $1,500,000. That is a substantial drop.

Mr. CALLAHAN. This is the money we estimate we will require as advances from the Federal home loan banks in connection with acquisition of a site and related costs for the new building.

Mr. JONAS. You have already drawn down that $5 million?

Mr. CALLAHAN. $4,350,000 has been drawn down.

Mr. EVINS. You have a miscellaneous item under "Income" of $5,000, up from $3,000.

Mr. CALLAHAN. The $5,000 represents fees that we collect from individuals for mortgage release instruments issued by the Board for the former Home Owners' Loan Corporation.

Mr. EVINS. The assessments go up from $3.9 million in 1967 to $6,132,000 in 1969. Have you had a revision of the amount of fees or does this represent more work and more examinations?

Mr. CALLAHAN. No. The Board presently is charging $78 as a fee. This is estimated to be continued through 1969.

Mr. EVINS. You have had that for several years.

Mr. CALLAHAN. Yes, sir.

AVERAGE LENGTH OF EXAMINATIONS

Mr. EVINS. How long do these examinations take, on an average?

Mr. WALTERS. They vary. On page 147 it shows that in 1967 the State-chartered associations averaged 23 days.

Mr. EVINS. What about your federally chartered institutions?

Mr. WALTERS. Thirty-seven days. You see, we have joint examinations on the State-chartered institutions in which State examiners participate, which accounts for the lower figure.

Mr. EVINS. It takes a month to examine an institution?

Mr. WALTERS. One man, yes, sir; or 37 man-days. Now, we do put in crews of maybe four, up to seven men, that might be there for 1 week. This represents the total man-days.

Mr. EVINS. I was just trying to get an impression as to how long it takes to make an examination of an institution. If you send in a team, it will take about a week.

Mr. WALTERS. That is right. It might take 2 to 3 weeks. We try to cut down on the number because we think it is more efficient to have fewer men in the crew rather than have too many trying to do the job at the same time.

COST OF EXAMINATION PROGRAM

Mr. EVINS. Now, from another point of view, the nonreimbursable expense excluding depreciation, cost of examining savings and loan associations, goes up from $11,755,000 to $13,401,000. Tell us about this cost of examining savings and loan associations.

Mr. CALLAHAN. This is the money that is requested in the nonadministrative limitation for the Office of Examinations and Supervision for the conduct of their examination program.

Mr. EVINS. This is the amount you want to commit to examinations?

Mr. CALLAHAN. Right. The $11.7 million represents actual expenses last year; the $12.7 million and $13.4 million represent estimated expenses for the next 2 years.

Mr. EVINS. On page 5 you show current liabilities, $3,472,000. What is the nature of these current liabilities?

Mr. CALLAHAN. This involves all of the bills the Board has, such as accrued salary expense, personnel benefits, utilities, travel expense, and any of our operating expenses.

Mr. EVINS. Unpaid bills of the Board?

Mr. CALLAHAN. Unpaid bills, operating expenses.

Mr. EVINS. You have cash with the Treasury of $2,500,000 and you owe $3,400,000, so you lack about $1 million cash to pay all those bills.

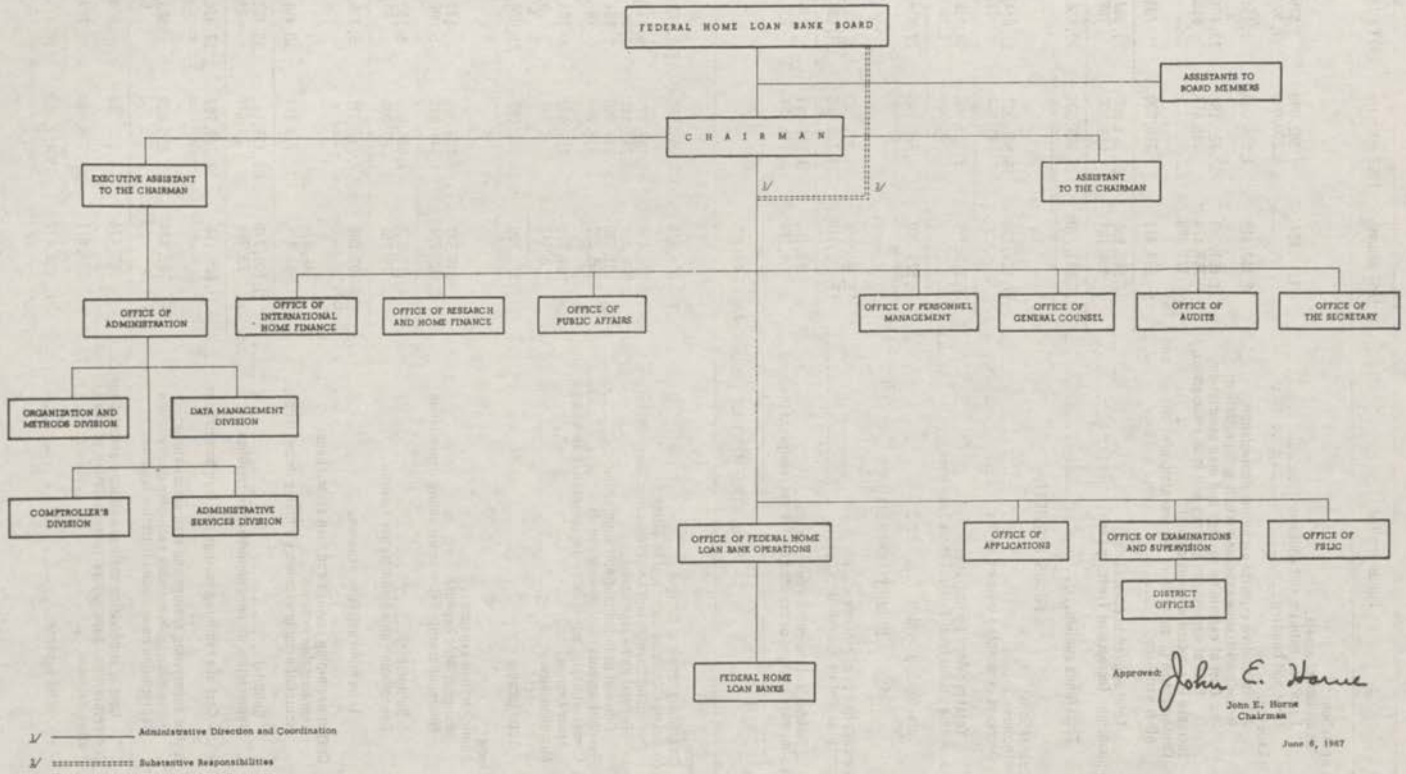
Mr. CALLAHAN. By the same token, you will notice we have a little better than $2 million in receivables.

Mr. EVINS. Very good.

ORGANIZATIONAL CHART AND FINANCIAL STATEMENTS

We shall place these statements in the record.

ORGANIZATIONAL CHART



Approved: John E. Horne
John E. Horne
Chairman

June 6, 1967

CHART A

A. STATEMENT OF SOURCES AND APPLICATION OF FUNDS

Funds applied	1967 actual	1968 estimate	1969 estimate
To operations:			
Acquisition of assets:			
Furniture, fixtures, and equipment	$117,824	$82,000	$75,000
Land and building		5,200,000	1,500,000
Expense:			
Administrative expense excluding depreciation	4,112,318	4,686,000	5,153,000
Nonadministrative expense excluding depreciation:			
Cost of examining savings and loan associations	11,801,749	12,725,182	13,401,230
Cost of supervising savings and loan associations	767,474	895,818	963,770
Increase in selected working capital	171,380		
Conservatorship, supervisory representative in charge, and other expenses	394,811	716,000	794,000
Total applied to operations	17,365,556	24,305,000	21,887,000
To financing: Increase in Treasury cash	158,164	618,506	769,588
Total funds applied	17,523,720	24,923,506	22,656,588
FUNDS PROVIDED			
By operations:			
Income	17,523,720	19,581,002	21,084,588
Decrease in selected working capital		142,504	72,000
Total provided by operations	17,523,720	19,723,506	21,156,588
By financing: Loan from Federal home loan banks		5,200,000	1,500,000
Total funds provided	17,523,720	24,923,506	22,656,588
BUDGET EXPENDITURES			
Funds applied to operations	17,365,556	24,305,000	21,887,000
Funds provided by operations	17,523,720	19,723,506	11,156,588
Net budget expenditures	−158,164	4,581,494	730,412
The above are charged or credited (−) to net receipts of the fund	−158,164	4,581,494	730,412

B. STATEMENT OF INCOME AND EXPENSE

Income:			
Examining fees and charges	$10,618,325	$10,953,150	$11,163,668
Assessments for services and facilities:			
Federal Savings and Loan Insurance Corporation	3,928,406	5,169,355	6,132,185
Federal home loan banks	2,079,424	2,251,447	2,461,135
Office of examinations and supervision	303,189	347,050	381,600
Reimbursements from other accounts	195,822	139,000	147,000
Conservatorship, supervisory representative in charge, and other income	394,811	716,000	794,000
Miscellaneous	3,743	5,000	5,000
Total income	17,523,720	19,581,002	21,084,588
Expense:			
Administrative expense:			
Reimbursable expense	149,547	139,000	147,000
Nonreimbursable expense excluding depreciation	3,962,771	4,547,000	5,006,000
Subtotal	4,112,318	4,686,000	5,153,000
Depreciation on administrative facilities	79,751	80,000	82,000
Total administrative expense	4,192,069	4,766,000	5,235,000
Cost of examining savings and loan associations:			
Reimbursable expense	46,275		
Nonreimbursable expense excluding depreciation	11,755,474	12,725,182	13,401,230
Subtotal	11,801,749	12,725,182	13,401,230
Depreciation on nonadministrative facilities	23,369	23,610	24,840
Cost of examining savings and loan associations	11,825,118	12,748,792	13,426,070
Cost of supervising savings and loan associations:			
Nonreimbursable expense excluding depreciation	767,474	895,818	963,770
Depreciation on nonadministrative facilities		5,390	6,160
Cost of supervising savings and loan associations	767,474	901,208	969,930
Conservatorship, supervisory representative in charge, and other expense	394,811	716,000	794,000
Total expense	17,179,472	19,132,000	20,425,000

B. STATEMENT OF INCOME AND EXPENSE—Continued

Funds applied	1967 actual	1968 estimate	1969 estimate
Assessments and fees in excess of expense	344,248	449,002	659,588
ANALYSIS OF DEFERRED AND UNDISTRIBUTED CREDITS			
Deferred and undistributed credits, beginning of year	360,385	704,633	1,153,635
Deferred and undistributed credits, end of year	704,633	1,153,635	1,813,223

C. STATEMENT OF FINANCIAL CONDITION

	1966 actual	1967 actual	1968 estimate	1969 estimate
ASSETS				
Cash with Treasury	$986,593	$1,144,757	$1,763,263	$2,532,851
Accounts receivable	1,553,104	1,746,358	1,939,000	2,087,000
Inventory: Supplies	16,886	16,327	18,000	18,000
Other: Postage meter	7,920			
Fixed assets:				
Land and building			5,200,000	6,700,000
Furniture, fixtures and equipment, net	697,668	712,372	685,372	647,372
Total assets	3,262,171	3,619,814	9,605,635	11,985,223
LIABILITIES				
Current liabilities	2,901,786	2,915,181	3,252,000	3,472,000
Loan payable to Federal home loan banks			5,200,000	6,700,000
Deferred and undistributed credits	360,385	704,633	1,153,635	1,813,223
Total liabilities	3,262,171	3,619,814	9,605,635	11,985,223

PROGRAM HIGHLIGHTS

Mr. EVINS. This is the 35th anniversary of the Federal Home Loan Bank System. You say that the number of members in 1967 was 4,985 and you estimate it will go up to about 5,000 in 1969. A member is not only a federally chartered institution but may be State-chartered or another type institution.

Mr. TREVAS. Yes. Some mutual savings banks.

Mr. EVINS. How many of them are there?

Mr. DAY. Forty-nine.

Mr. EVINS. You want legislation for the Federal savings and loan associations to have the advantages of the mutual savings banks, basically?

Mr. HORNE. That is basically what H.R. 13718 would provide for.

Mr. EVINS. Assets of all the member institutions are estimated to be $167,500 million.

Mr. HORNE. By the way, the committee may be interested in knowing that we have one insurance company that is a member.

Mr. EVINS. That was mentioned.

Mr. HORNE. Membership is made available by law to insurance companies, although very few of them are.

Mr. GIAIMO. Why is there a decrease in the number of savings and loan associations?

Mr. TREVAS. Because of mergers.

Mr. HORNE. This credit bind that we have been in in the past 2 years is bringing about a great deal of interest in merger applications and has resulted in quite a few mergers. In other words, a lot of the small and even some of the big ones that have not been run soundly or have not used the wisest operation procedures are being merged out of existence.

Mr. EVINS. Let us recess for lunch and come back at 1:15.

AFTERNOON SESSION

NUMBER AND ASSETS OF MEMBER INSTITUTIONS

Mr. EVINS. We will resume our hearings on the budget justification for the Federal Home Loan Bank Board.

Mr. Chairman, you tell us in your statement that the combined resources of the member institutions totaled last year over $145 billion, and in fiscal year 1967 the saving and loan members made home loans amounting to $14.6 billion.

Mr. HORNE. Yes, sir.

Mr. EVINS. They made a $6 billion gain in 6 months; $145 billion is combined resources at June 30 and the figure estimated for December 31, $151 billion. That is a $6 billion increase in resources in 6 months.

Mr. HORNE. That is counting savings and everything.

Mr. EVINS. That is a pretty good gain.

Mr. HORNE. Also, as I pointed out, Mr. Chairman, the savings inflow, counting dividends and all, in 1967 amounted to $10.7 billion, for the total.

Mr. EVINS. All Federal savings and loan associations are required to be members and you say at June 30, 1967, there were 2,055 privately owned, local, mutual institutions operating under charter and supervised by the Board.

Mr. HORNE. Yes, sir. These are federally chartered associations or State mutual.

Mr. EVINS. Then you say the number of insured institutions as of June 30, 1967, was 4,488. Their combined assets were about $133.1 billion. What is the difference between the 4,488 and 2,055 shown in the preceding paragraph?

Mr. HORNE. The 2,055, Mr. Chairman, are the federally chartered associations that automatically are insured. The remainder making up the difference between 2,055 and 4,488 are State-chartered associations, but also federally insured.

Mr. EVINS. They are all insured, but the first group are those federally chartered.

Mr. HORNE. Yes, sir.

And then the combined assets of both the groups amount to $133.1 billion.

Mr. EVINS. I had the impression earlier that there were more Federal institutions than there were State.

Mr. HORNE. No, sir. I think the total amount of assets leans a little bit toward the Federals, but numberwise there are more State.

Mr. EVINS. There is no requirement that the State institutions be insured by the Federal Savings and Loan Insurance Corporation, but they may avail themselves of it if they desire.

Mr. HORNE. Yes, sir. And there are quite a few numberwise, not dollarwise, or savingswise or assetwise, but there are quite a few numberwise that do not have insurance of accounts.

Mr. MOSCOV. There are some States which require insurance as a condition of operation, California being one of them.

Mr. EVINS. The number, size, and business activities supervised by the Board continues to increase. Your figures on page 8 show that.

Assets at June 30 are up $5.3 billion, but the loans made during the year were down from $22.3 billion to $14.6 billion or down 34.5 percent.

Mr. HORNE. This is connected with two developments, Mr. Chairman. The drop there, one is the drop in the flow of savings of the savings and loan associations in calendar year 1966, which, as we have pointed out, was quite big. And then in 1967, even though the flow returned to a good level, the cessation of homebuilding that occurred in 1966 required several months to reconstitute itself, so to speak.

Mr. EVINS. The assets of all of the associations are up and the number of loans last year were down.

Mr. HORNE. Yes, sir.

Mr. EVINS. You show on the first table the 4,935 associations, which is less than the 4,999 of the previous year; 64 less.

Mr. HORNE. That is primarily, sir, because of the growth of mergers or sick associations we handled in several ways.

As I pointed out earlier, some of them we paid off, some of them we merged.

Mr. EVINS. Overall, the number of institutions is down about 64 from the preceding year?

Mr. HORNE. Yes, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages 6 through 10.

(The pages follow:)

PROGRAM HIGHLIGHTS AND OUTLINE OF FUNCTIONS—FEDERAL HOME LOAN BANK BOARD

PROGRAM HIGHLIGHTS

[Dollar amounts in millions]

Federal Home Loan Bank System	1967 actua	1968 estimate	1969 estimate
Members (June 30):			
Number	4,985	4,990	5,000
Assets	$145,836	$156,500	$167,500
Savings (shares)	$127,045	$137,300	$148,100
Mortgage loans	$122,955	$132,400	$142,300
Insured	4,488	4,520	4,555
Regional banks: Advances outstanding	4,302	4,600	5,600

Outline of functions

The Federal Home Loan Bank Board supervises and regulates the Federal Home Loan Bank System, the system of Federal savings and loan associations, and the Federal Savings and Loan Insurance Corp., created to serve the American public through the media of savings and loan associations, cooperative banks, and other financial institutions engaged in the encouragement of thrift and economical homeownership.

These three components are described as follows:

Federal Home Loan Bank System.—The Federal Home Loan Bank System, through its 12 regional Federal Home Loan Banks, strategically located throughout the country, provides a permanent credit reserve for eligible thrift institutions of the savings and loan type. The Federal Home Loan Banks advance funds to these member institutions to meet withdrawal demands as well as seasonal and expansionary needs for additional home-mortgage funds. Through the use of interbank deposits, the System maintains an adequate flow of home loan funds into every locality. October 15, 1967, marked the 35th anniversary of the opening of the regional banks.

The regional banks, the stock of which is owned by their member institutions, do not deal directly with individuals. The great majority of the members are

savings and loan associations, also known sectionally as building and loan associations, cooperative banks, and homestead associations. Included also in the membership of the Federal Home Loan Bank System are 49 mutual savings banks.

The importance of the Federal Home Loan Bank System is indicated by the fact that at June 30, 1967, the combined resources of its member institutions totaled over $145 billion (the December 31, 1967 figure is estimated at approximately $151 billion). In fiscal year 1967 its savings and loan members made home loans amounting to $14.6 billion.

Located in most cities, suburban areas, and towns throughout the United States, the System's member institutions serve over 53 million people including savers, investors, and home-loan borrowers.

Federal savings and loan associations.—The creation of Federal associations was authorized by Congress in 1933 to provide additional local thrift institutions for people to place their savings and/or obtain loans to finance their homes. In their charter and form of organization Federal associations embody the most modern practices developed by savings and home-financing institutions during their 136-year history in this country.

All Federal savings and loan associations are required to be members of the Federal Home Loan Bank System and to carry insurance of their savings or share accounts with the Federal Savings and Loan Insurance Corp.

At June 30, 1967, there were 2,055 privately owned, local, mutual institutions operating under charter, examination and supervision by the Federal Home Loan Bank Board. Their combined resources at June 30, 1967, were $72.1 billion. Federal savings and loan associations are in operation in every State, in the District of Columbia, and in Puerto Rico.

Federal Savings and Loan Insurance Corp.—Created in 1934, the Federal Savings and Loan Insurance Corp. insures, up to $15,000 each, savings or share accounts in approved savings and loan associations and similar institutions. Insurance of savings has been an important factor in stimulating the flow of savings into thrift and home-financing institutions. These savings are used largely for the financing of homes. The number of insured institutions at June 30, 1967, was 4,488; their combined assets were $133.1 billion.

All insured institutions are members of the Federal Home Loan Bank System.

INTRODUCTION

The Federal Home Loan Bank Board is primarily a regulatory and supervisory agency in the savings and home-financing field. It also issues charters for Federal savings and loan associations, insures savings or share accounts in Federal savings and loan associations and in approved State-chartered savings and loan or building and loan associations, and associations of the savings and loan type.

The 1969 budget estimates of the Federal Home Loan Bank Board, the Office of Examinations and Supervision, and the Federal Savings and Loan Insurance Corporation are based on the need for maintaining all operations in a current status giving full consideration to the complex problems arising from changing economic conditions and the increased competition for savings among financial institutions.

The number, size, and business activity of the institutions supervised by the Board continue to increase. The following table relating to member savings and loan associations shows the number, assets, loans made during year, and net inflow of new savings at June 30, 1966, and June 30, 1967; it also shows the increases over 1966 in dollar and percentage terms:

[Dollar amounts in billions]

Description	Fiscal 1966	Fiscal 1967	Increase over 1966	
			Amount	Percent
Number of member S. & L. associations at June 30	4,999	4,935	−64	−1.3
Assets at June 30	$130.8	$136.1	$5.3	4.1
Loans made during year	22.3	14.6	−7.7	−34.5
Net inflow of new savings	6.3	7.6	1.3	20.6

As indicated, the number of member institutions decreased by 64 over the number recorded at June 30, 1966. Assets showed an increase of $5.3 billion over June 30, 1966, and net inflow of new savings showed an increase of $1.3 billion over fiscal year 1966. Loans made during fiscal year 1967 showed a decrease of $7.7 billion over loans made during fiscal year 1966. The number of loans made by member institutions in fiscal year 1967 represented over 43 percent of the Nation's home financing.

SUMMARY OF AGENCY EXPENSES

The budget programs of the Federal Home Loan Bank Board including the Federal Savings and Loan Insurance Corporation are presented as business-type budgets.

The budget estimates for 1969, the revised estimates for the current fiscal year, and actual expenses for fiscal 1967 are summarized in the following two tables:

COMPARATIVE SUMMARY OF POSITIONS AND MAN-YEARS

Unit	1967 actual		1968 estimate		1969 estimate	
	Positions	Man-years	Positions	Man-years	Positions	Man-years
Board and staff offices	354	296.8	356	337.6	373	359.2
Federal Savings and Loan Insurance Corporation	19	14.4	20	17.6	20	19.6
Office of Examinations and Supervision	953	832.7	953	864.0	953	884.0
Total	1,326	1,143.9	1,329	1,219.2	1,346	1,262.8

COMPARATIVE SUMMARY OF EXPENSES

Unit	1967 actual	1968 estimate	1969 estimate
Administrative expenses:			
Board and staff offices	$4,042,522	[1] $4,627,000	$5,088,000
Federal Savings and Loan Insurance Corporation	245,059	[2] 306,000	340,000
Subtotal	4,287,581	4,933,000	5,428,000
Nonadministrative expenses:			
Office of Examinations and Supervision	12,546,317	13,650,000	14,396,000
Total	16,833,898	18,583,000	19,824,000

[1] Includes $87,000 for increased pay costs supplemental.
[2] Includes $8,000 for increased pay costs supplemental.

SUMMARY OF BOARD AND STAFF OFFICES EXPENSES

The 1969 estimates of administrative expenses of the Board and staff offices, the revised estimates for the current fiscal year, and actual expenses for 1967 are summarized in the following table:

Description	1967 actual	1968 estimate	1969 estimate
Positions	354	356	373
Man-years	296.8	337.6	359.2
Personnel compensation	$3,041,807	$3,520,400	$3,861,000
Personnel benefits	217,261	262,600	292,000
Total, personal services and benefits	3,259,068	3,783,000	4,153,000
Contractual services and supplies	846,250	896,000	992,000
Acquisition of capital assets	86,751	87,000	90,000
Total gross expenses	4,192,069	4,766,000	5,235,000
Reimbursements from other accounts	−149,547	−139,000	−147,000
Total net expenses	4,042,522	4,627,000	5,088,000
Estimated savings	367,478	0	0
Proposed supplemental due to increased pay costs (Public Law 90-206)	0	−87,000	0
Actual, authorization, and estimate	4,410,000	4,540,000	5,088,000

As shown, the Federal Home Loan Bank Board requests authority to expend $5,088,000 for administrative expenses of the Board and its staff offices in fiscal 1969.

The estimate reflects an increase in personnel of 17 positions and 21.6 man-years over the current fiscal year, and an increase in funds of $461,000 over the estimated expenses for the current fiscal year.

Of the increase in funds, $340,600 is in personnel compensation, $29,400 in personnel benefits, $96,000 in contractual services and supplies, and $3,000 in acquisition of capital assets. These increases, however, are offset by $8,000 additional reimbursements estimated to be collected in fiscal year 1969.

STAFF REQUIREMENTS

Mr. EVINS. Your staff requirements are shown on page 9. As you testified earlier, you are asking for 17 more jobs.

Mr. HORNE. Yes, sir.

Mr. EVINS. From 1,329 to 1,346.

Administrative expenses are up and supervision is up. How much is the total increase again?

Mr. CALLAHAN. $1,249,000.

Mr. EVINS. Of the increase in funds, $340,600 is in personnel compensation, $29,400 in personnel benefits, $96,000 in contractual services and supplies, and $3,00 in acquisition of capital assets. These are offset by $8,000 additional reimbursements estimated to be collected in fiscal year 1969.

REIMBURSEMENTS

Reimbursement is shown on page 131. This is $75,000 from the Agency for International Development to cover the estimated annual costs to be incured by the Board for providing AID with technical service training and other functions performed by the Board in connection with foreign assistance programs dealing with savings and home financing in foreign countries.

You testified that there is no balance-of-payment problem involved here.

Mr. TREVAS. Not from our agency because we get reimbursed for anything.

Mr. EVINS. You give them information and service, and bill them about $75,000?

Mr. TREVAS. That is right. Most of that is right here.

Mr. EVINS. We will place in the record page 131 at this point along with pages 11 and 12, other expenses.

(The pages follow:)

REIMBURSEMENTS FROM OTHER ACCOUNTS

	1967 actual	1968 estimate	1969 estimate
Agency for International Development	$51,722	$67,000	$75,000
Department of Housing and Urban Development	17,576	0	0
Federal Savings and Loan Insurance Corporation	12,108	9,000	9,000
Office of Examinations and Supervision	56,532	63,000	63,000
Miscellaneous	11,609	0	0
Total	149,547	139,000	147,000

The estimate represents reimbursements to the Board of the cost of printing, reproduction, and related services furnished by the Printing and Reproduction Section of the Administrative Services Division to the units of the Board.

The estimate also provides for reimbursement to the Board of $75,000 from the Agency for International Development to cover the estimated annual costs to be incurred by the Board for providing AID with technical support services, training and other functions performed by Board personnel in connection with foreign assistance programs dealing with savings and home financing in foreign countries.

OTHER EXPENSES AND SOURCES OF FUNDS

Personal services and benefits.—The need for the 17 positions requested is set out in the departmental justifications of the following offices and divisions: Office of Public Affairs (1); Office of the General Counsel (2); Office of Audits (1); Office of Personnel Management (1); Office of Federal Home Loan Bank Operations (5); Office of Applications (4); Administrative Services Division (2), and Data Management Division (1).

All other expenses.—The increase of $99,000 in all other expenses is in the items of travel and transportation of persons $10,000; rent, communications, and utilities $37,000; printing and reproduction $14,000; other services $29,000; services of other agencies $2,000; supplies and materials $4,000, and equipment $3,000. Review and analyses of these items together with justification of the need for the increases will be found beginning on page 121.

Reimbursements.—A table showing reimbursements to the Board for services rendered will be found on page 131.

Sources of funds

The funds used to pay the administrative expenses of the Board are derived from the following sources:

Source	1967 actual	1968 estimate	1969 estimate
By assessments upon:			
Federal home loan banks	$1,455,308	$1,631,135	$1,793,520
Federal Savings and Loan Insurance Corporation	2,284,025	2,648,815	2,912,880
Office of Examinations and Supervision (FHLBB)	303,189	347,050	381,600
Total funds	4,042,522	4,627,000	5,088,000

Distribution of the 1969 expenses among the three sources shown is based upon the following formula: The Insurance Corporation will pay 25 percent of the administrative expenses of the Board as a direct charge for services rendered by the Board staff offices and divisions in its behalf. The remainder of the administrative expenses will be distributed by assessment as follows: 10 percent to the Office of Examinations and Supervision, 43 percent to the Insurance Corporation, and 47 percent to the banks. The percentage for the Office of Examinations and Supervision is based on past experience. The respective percentages for the Insurance Corporation and the banks are based on the ratio of the membership of each one to the combined membership of the Insurance Corporation and the bank system at June 30, 1967.

MEMBER INSTITUTIONS

Mr. EVINS. The chart on page 13 shows you that the member institutions increased from 3,698 in 1946 to an estimated fiscal 1969 number of 5,000. Dollarwise it goes up from $9.4 billion to $167.5 billion. Total assets for June 1967 reflect an increase for the fiscal year of $7.5 billion or 5.4 percent.

They are expected to increase by $10.7 billion during the current year and to reach $167.5 billion, an estimated increase of 14.9 percent in 2 years.

In the last 5 years membership increased by 119, or 2.4 percent, and assets increased by $59 billion, or 68 percent. So, Mr. Chairman, these tables all show a phenomenal growth.

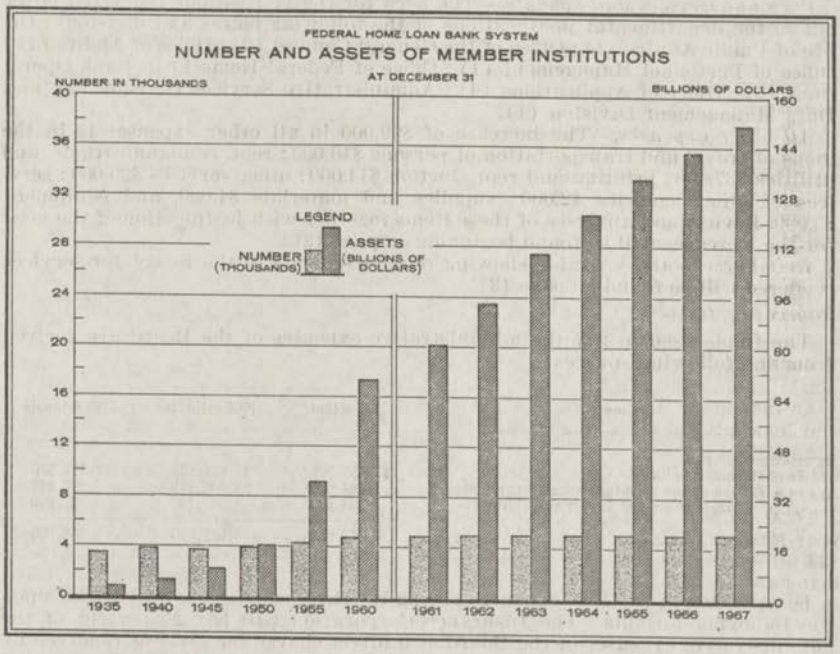
Mr. HORNE. Yes, sir.

Mr. EVINS. Do you know any other industry that had a 68-percent increase.

Mr. HORNE. There is no doubt there are some, but I do not recall one right now.

Mr. EVINS. Place in the record the chart on page 14. This shows you the number of institutions in billions of dollars of assets. It is a very good table.

(The table follows:)



Mr. EVINS. There is more breakdown on the composition of the membership. Federal-chartered is 2,055, the State-chartered and insured is 2,433. State-chartered uninsured is 447 and mutual savings banks, 49. They are only in certain States?

Mr. HORNE. That is right.

Mr. EVINS. Where are they located?

Mr. TREVAS. Principally in the East.

Mr. EVINS. Then you have one insurance company. Tell us about this again.

Mr. DAY. This came about 2 years ago.

Mr. EVINS. Where is it located?

Mr. DAY. It is located in Detroit, Mich.

Mr. EVINS. What's the name of the company?

Mr. DAY. The name of the life insurance company is League Life Insurance Co., Detroit, Mich.

MORTGAGE LOANS

Mr. EVINS. Mortgage loans are shown to be estimated at $18,590 million. That is a lot of loans and it has grown from $2.2 billion in 1946, 23 years.

Place pages 16 and 18 in the record.
(The pages follow:)

Mortgage Loans.—Loans made by member savings and loan associations for the years indicated are shown in the following table:

LOANS MADE BY MEMBER SAVINGS AND LOAN ASSOCIATIONS

[In thousands]

	Savings and Loan members of FHLB system	All insured associations
Fiscal year:		
1946	$2,636,640	$2,214,731
1950	4,202,461	3,708,755
1955	10,297,586	9,820,255
1960	14,193,016	13,916,162
1961	15,161,982	14,893,578
1962	18,937,180	18,646,917
1963	22,239,441	21,939,045
1964	25,217,130	24,894,717
1965	23,788,807	23,473,280
1966	22,343,134	22,023,589
1967	14,605,117	14,394,791
1968 [1]	16,200,000	15,990,000
1969 [1]	18,800,000	18,590,000

[1] Estimate.

As indicated, total dollar volume of mortgage loans made by member savings and loan associations in fiscal year 1967 aggregated $14.6 billion compared with $22.3 billion in fiscal year 1966, a decrease of $7.7 billion, or 34.5 percent. Mortgage loans are expected to reach $16.2 billion in the current fiscal year and $18.8 billion in fiscal year 1969, an estimated increase of $4.2 billion in the 2-year period.

Total dollar volume of mortgage loans made by insured associations in fiscal year 1967, also shown in the above table, aggregated $14.4 billion compared with $22 billion in fiscal year 1966, a decrease of $7.6 billion, or 34.6 percent. These loans are expected to reach $16 billion in the current fiscal year and $18.6 billion in fiscal year 1969, an estimated increase of $4.2 billion in the 2-year period.

TREND IN SAVINGS

Savings.—The trend in savings in member savings and loan associations is shown in the following table:

TREND IN SAVINGS IN MEMBER SAVINGS AND LOAN ASSOCIATIONS

[In billions of dollars]

	New savings	Withdrawals	Net inflow
Fiscal year:			
1947	3.0	1.9	1.1
1950	4.5	3.0	1.5
1955	11.9	7.3	4.6
1960	23.0	16.3	6.7
1961	25.7	17.5	8.2
1962	29.0	20.3	8.7
1963	33.3	22.4	10.9
1964	36.5	26.3	10.2
1965	38.3	29.0	9.3
1966	40.6	34.3	6.3
1967	48.5	40.9	7.6
1968 [1]	50.5	42.5	8.0
1969 [1]	52.8	44.4	8.4

[1] Estimate.

As indicated, new savings accepted by member savings and loan associations during fiscal 1967 aggregated $48.5 billion, an increase over 1966 of $7.9 billion, or 19.5 percent. Withdrawals of savings aggregated $40.9 billion, leaving a net inflow of $7.6 billion.

Net inflow of savings for the current fiscal year is expected to reach $8 billion, and $8.4 billion in fiscal 1969.

Mr. EVINS. You state home purchase loans reflected a decrease of 31.7 percent over 1966, and loans for other purposes a decrease of 36 percent. The overall decrease was 34.9 percent. Is this because of unusually high interest rates or what?

Mr. HORNE. That has something to do, of course, with the rise in interest rates.

Mr. EVINS. Construction is down by the table. Home purchases is slightly up, percentagewise, and other purposes are decreased. This is repairs and alterations and improvements?

Mr. HORNE. That is right.

Mr. EVINS. Savings are shown on page 18. New savings increased from $3 billion to $52.8 billion from 1947 to 1969, about 22 years. Withdrawals for 1969 are estimated to be $44.4 billion for a net inflow of $8.4 billion.

Mr. TREVAS. These are figures at the end of the fiscal year.

Mr. JONAS. This was prepared last fall?

Mr. TREVAS. Yes.

Mr. HORNE. This is on the fiscal year basis, too.

Mr. JONAS. It is a little out of date now.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages 20, 21, 22, and 23.

(The pages follow:)

ADMINISTRATIVE EXPENSES (GROSS) BY ACTIVITIES

	Total	Examination and supervision of Federal home loan banks	Chartering Federal and insuring savings and loan associations	Executive direction and staff services	Analysis of operations	Administrative services
Fiscal year 1969:						
Positions	373	29	49	136	54	105
Man-years	359.2	26.3	47.2	131.3	51.9	102.5
Personnel compensation	$3,861,000	$349,869	$567,114	$1,650,393	$464,624	$829,000
Personnel benefits	292,000	21,888	38,304	107,392	42,336	82,080
All other expenses	1,082,000	82,360	76,399	425,025	220,945	277,271
Total 1969	5,235,000	454,117	681,817	2,182,810	727,905	1,188,351
Fiscal year 1968:						
Positions	356	24	45	132	53	102
Man-years	337.6	22.9	44.6	120.4	50.0	99.7
Personnel compensation	$3,520,400	$298,671	$531,156	$1,473,214	$420,829	$796,530
Personnel benefits	262,600	18,655	34,978	93,927	38,865	76,175
All other expenses	983,000	73,521	66,708	372,596	203,545	266,630
Total 1968	4,766,000	390,847	632,842	1,939,737	663,239	1,139,335
Fiscal year 1967:						
Positions	354	23	45	132	51	103
Man-years	298.6	21.7	41.2	101.1	45.6	87.2
Personnel compensation	$3,041,807	$261,729	$474,737	$1,241,371	$372,496	$691,474
Personnel benefits	217,261	18,457	33,908	88,924	26,612	49,360
All other expenses	933,001	69,378	67,023	341,647	210,345	244,608
Total 1967	4,192,069	349,564	575,668	1,671,942	609,453	985,442

PROGRAM ON EXAMINATION AND SUPERVISION OF FEDERAL HOME LOAN BANKS

The examination phase of this activity for fiscal 1969 is carried on by the office of audits (9 positions); the supervision phase is carried on by the Office of Federal Home Loan Bank Operations (20 positions).

The functions and duties of the Board and its staff units in the examination and supervision of the 12 regional banks include:

1. Issuance of regulations covering their operations.
2. Appointment of four public interest members of each regional bank's board of directors (the comptroller's division conducts the elections of the industry members of each board).
3. Review, analysis, and approval of the operating budget of each bank.
4. Examination of each bank at least once annually.
5. Issuance of consolidated obligations.

The 12 Federal Home Loan Banks constitute a Nationwide permanent credit reserve for their member institutions. They provide members with a ready source of funds to meet both normal and unusual home-financing demands and withdrawal requests of their investors. They also serve to equalize the supply of home-mortgage credit by the transfer of funds between banks to areas where unfilled demands exist.

The banks obtain their funds primarily from capital stock subscribed by member institutions, interbank deposits, members' deposits, return on their investments, and borrowings from the public.

Capital stock.—The U.S. Government provided the original capital of the banks by investing, over a period of years, $124,741,000. This investment was retired by the banks, over the years, at a rate in excess of statutory requirements. As of July 2, 1951, the Government's investment had been fully repaid. All of the capital stock of the 12 banks is owned by the member institutions. Capital stock outstanding at June 30, 1967, was $1,391,540,175, an increase of $52,123,250 or 3.9 percent since last year.

Operating highlights.—A comparison of the operating highlights of the banks at June 30, 1965, 1966, and 1967 is afforded in the following table:

[In thousands of dollars]

Description	June 30, 1965	June 30, 1966	June 30, 1967
Assets	7,425,222	8,951,001	8,173,727
Liabilities	6,018,823	7,439,796	6,589,149
Capital	1,406,399	1,511,205	1,584,578
Legal reserve	94,009	108,595	123,926
Net income for year	54,637	72,934	47,726
Investments (par)	1,705,410	1,959,335	3,781,985

As indicated, assets at June 30, 1967, reflected a decrease for the fiscal year of $777.3 million or 8.7 percent; liabilities decreased by $850.7 million or 11.4 percent, thus capital increased by $73.4 million or 4.9 percent. Legal reserve increased in the same period by $15.3 million or 14.1 percent; net income for year decreased by $25.2 million or 34.6 percent, and investments increased by $1,822.7 million or 93 percent.

Loans to members.—The following table shows the trend in loans to member institutions, repayments, and amounts outstanding at June 30 each year for the years indicated:

[In millions of dollars]

Fiscal year	Loans	Repayments	Outstanding June 30
1950	364.3	285.0	442.7
1955	1,058.4	716.6	1,016.9
1956	948.8	792.3	1,173.4
1957	931.9	1,025.9	1,079.4
1958	1,258.6	1,408.5	929.5
1959	1,622.4	1,014.8	1,537.1
1960	2,050.5	1,817.8	1,769.8
1961	2,199.3	2,099.7	1,869.4
1962	3,583.7	2,686.0	2,767.1
1963	4,498.0	3,995.3	3,269.8
1964	6,078.2	4,579.1	4,768.9
1965	5,661.5	4,844.5	5,585.9
1966	4,499.7	3,302.5	6,783.1
1967	2,065.3	4,546.2	4,302.2

Loans or advances to member institutions in fiscal year 1967 aggregated $2.1 billion, a decrease over last year $2.4 billion or 53.3 percent. Repayments aggregated $4.6 billion, an increase over last year of $1.3 billion or 39.4 percent. Loans outstanding at June 30, 1967, aggregated $4.3 billion, a decrease over last year of $2.5 billion or 36.8 percent.

Mr. EVINS. Capital stocks are shown on page 22. The U.S. Government provided the original capital, as was testified to earlier, of $124,741,000 over a period of years. This investment was retired by the banks and as of July 2, 1951, the Government's investment had been fully repaid. All of the capital stock of the 12 banks is owned by the member institutions.

LOANS TO MEMBERS

Loans or advances to member institutions aggregated $2.1 billion, a decrease of $2.4 billion over last year. They required less funding.

Mr. TREVAS. That is right.

CONSOLIDATED OBLIGATIONS

Mr. EVINS. We will place in the record pages 24 and 25.

(The pages follow:)

CONSOLIDATED FEDERAL HOME LOAN BANK OBLIGATIONS

Consolidated obligations—Pursuant to law, all issuances of consolidated obligations by the Board become the joint and several obligations of all the Banks. The following table shows the number of offerings made and the amounts of such offerings for the years indicated:

Fiscal year	Number of offerings	Amount (millions)
1950	5	$333
1955	6	554
1956	9	1,530
1957	10	1,481
1958	6	994
1959	8	1,073
1960	9	1,982
1961	8	1,214
1962	8	2,392
1963	10	2,928
1964	13	4,522
1965	13	4,357
1966	15	6,533
1967	7	3,850

As indicated, the Federal Home Loan Bank Board made seven offerings of consolidated Federal Home Loan Bank obligations during fiscal 1967 aggregating $3.9 billion. Each of these offerings was for a term of more than 1 year. Interest ranged from 5.375 percent to 6.25 percent and compares with the 1966 range of 4.30 percent to 5.75 percent. The total offerings represented a decrease from fiscal 1966 of $2.7 billion, or 41 percent. The proceeds from these offerings were used to meet the loan demands of the membership.

The following table shows cumulative totals of consolidated obligations issued, retired, and outstanding at June 30, 1965, 1966, and 1967:

[In thousands]

Description	June 30, 1965	June 30, 1966	June 30, 1967
Issued	$27,591,250	$34,124,250	$37,974,250
Retired	22,834,250	27,815,250	33,389,250
Outstanding	4,757,000	6,309,000	4,585,000

The balance outstanding at June 30, 1967, reflects a decrease of $1,724 million or 27.3 percent when compared with June 30, 1966.

Financial condition.—Beginning on the following page, the following three consolidated financial statements of the banks, as of June 30, 1967, appear in the order listed below:

1. Comparative condensed consolidated statement of condition.
2. Comparative consolidated statement of income and expense.
3. Condensed income statement and disposition of net income.

Personnel requirements.—The estimate of 29 positions for this activity reflects an increase of five positions over the current fiscal year. The new positions for the Office of Federal Home Loan Bank operations are: One GS–13 financial analyst; one GS–12 and one GS–11 systems accountants, and two GS–5 clerks. A more detailed outline of the duties involved in this joint activity and justification of the need for the new positions requested will be found beginning on pages 69 and 82.

On a man-year basis there are 26.3 man-years in 1969 and 22.9 in 1968, an increase in 1969 of 3.4 man-years. Of the increase, 0.4 man-year represents delay in filling positions in the current fiscal year; the remaining 3.0 man-years represent the new positions requested.

CONSOLIDATED STATEMENTS

Mr. EVINS. And here is a comparative condensed statement on page 26 showing as of June 1967 total assets of the institutions were $8.173 billion, last year it was $8.951 billion, a decrease of $777,274 million. They had a right sharp decline in the assets in the last year.

What caused this decline?

Mr. HORNE. Repayment of advances by members to the banks is the main reason for that. That fluctuates rapidly depending on how heavily the members borrow from the central banks.

Mr. EVINS. Place in the record pages 26 through 33.

(The pages follow:)

COMPARATIVE CONDENSED CONSOLIDATED STATEMENT OF CONDITION AS OF DATES INDICATED

	June 30, 1967	June 30, 1966	Increase or decrease [1]
ASSETS			
Cash:			
On hand and in banks	$60,687,862	$67,163,673	[1] $6,475,811
Treasurer of the United States	34,284,415	92,653,278	[1] 58,368,863
Total cash	94,972,277	159,816,951	[1] 64,844,674
Investments:			
U.S. Treasury obligations	3,688,257,897	1,953,389,669	1,734,868,228
Securities held under resale agreements	49,794,286	0	49,794,286
Total investments	3,738,052,183	1,953,389,669	1,784,662,514
Advances outstanding:			
Secured	4,162,507,917	5,970,295,743	[1] 1,807,787,826
Unsecured	139,701,499	812,823,260	[1] 673,121,761
Total advances outstanding	4,302,209,416	6,783,119,003	[1] 2,480,909,587
Accrued interest receivable	35,399,129	48,644,958	[1] 13,245,829
Deferred charges	3,060,580	5,999,363	[1] 2,938,783
Other assets	33,164	30,836	2,328
Total assets	8,173,726,749	8,951,000,780	[1] 777,274,031
LIABILITIES AND CAPITAL			
Deposits:			
Members—time	1,641,671,550	694,775,066	946,896,484
Members—demand	283,679,052	277,638,617	6,040,435
Government instrumentalities—demand	1,005,715	52,255,626	[1] 51,249,911
Applicants for membership	148,150	329,676	[1] 181,526
Total deposits	1,926,504,467	1,024,998,985	901,505,482
Accrued interest payable	73,222,783	91,702,862	[1] 18,480,079
Accounts payable	841,753	787,212	54,541
Dividends payable	10,739,438	13,236,491	[1] 2,497,053
Other liabilities	0	16,520	[1] 16,520
Deferred credits	590,477	53,340	537,137
Consolidated obligations [2]	4,577,250,000	6,309,000,000	[1] 1,731,750,000
Total liabilities	6,589,148,918	7,439,795,410	[1] 850,646,492
Total paid in on capital stock	1,391,540,175	1,339,416,925	52,123,250
Retained earnings:			
Legal reserve	123,926,299	108,595,384	15,330,915
Undivided profits	69,111,357	63,193,061	5,918,296
Total retained earnings	193,037,656	171,788,445	21,249,211
Total capital	1,584,577,831	1,511,205,370	73,372,461
Total liabilities and capital	8,173,726,749	8,951,000,780	[1] 777,274,031

[1] Decrease.

[2] Consolidated Federal home loan bank obligations issued by the Federal Home Loan Bank Board and now outstanding are the joint and several obligations of all Federal home loan banks. The amount shown at June 30, 1967, represents the total unmatured obligations less $7,750,000 held for retirement by 4 Federal home loan banks.

COMPARATIVE CONSOLIDATED STATEMENT OF INCOME AND EXPENSE FOR THE YEARS ENDED

	June 30, 1967		June 30, 1966	
	Amount	Percent	Amount	Percent
Earned operating income:				
Interest on advances	$357,699,712	74.1	$284,158,086	82.4
Interest on securities	124,944,254	25.9	60,564,479	17.6
Miscellaneous	2,600	----	5,980	----
Total operating income	482,646,566	100.0	344,728,545	100.0
	Amount	Percent of operating income	Amount	Percent of operating income
Operating expenses:				
Compensation	$3,849,493	0.8	$3,371,018	1.0
Travel	344,786	.1	355,799	.1
Other administrative expenses	2,458,478	.5	2,265,302	.7
Interest on consolidated obligations	348,221,836	72.2	229,699,893	66.6
Concessions on consolidated obligations	5,837,397	1.2	5,287,007	1.5
Paid through office of fiscal agent	432,601	.1	250,939	.1
Interest on members' deposits	42,500,253	8.8	27,631,500	8.0
GAO audit expense	8,300	----	6,300	----
Assessment for expenses of FHLB Board	2,109,521	.4	2,010,338	.6
Total operating expenses	405,762,665	84.1	270,878,096	78.6
Net operating income	76,883,901	15.9	73,850,449	21.4
	Amount	Percent of total income	Amount	Percent of total income
Nonoperating income:				
Profit—Sales of securities	$580,237	0.1	$109,578	----
Furniture and equipment sales	15,744	----	8,085	----
Miscellaneous	17,037	----	13,947	----
Total nonoperating income	613,018	.1	131,610	----
Nonoperating charges:				
Loss—sales of securities	679,263	.2	852,025	.3
Furniture and equipment purchases	152,203	----	127,730	----
Miscellaneous	10,878	----	68,387	----
Total nonoperating charges	842,344	.2	1,048,142	.3
Net income	76,654,575	15.8	72,933,917	21.1

CONDENSED INCOME STATEMENT AND DISPOSITION OF NET INCOME FROM BEGINNING OF OPERATIONS THROUGH JUNE 30, 1967

	Combined	
	Amount	Percent
Income:		
Operating	$2,316,508,676	99.3
Nonoperating	15,446,510	.7
Gross income	2,331,955,186	100.0
Charges against income:		
Operating	1,705,377,144	73.1
Nonoperating	7,920,363	.4
Total charges	1,713,297,507	73.5
Net income to date	618,657,679	26.5
Disposition of net income:		
Allocated to legal reserve	123,926,299	20.0
Dividends paid:		
U.S. Government	26,176,170	4.2
Member institutions	397,838,559	64.3
Total dividends	424,014,729	68.5
Retirement fund	1,586,426	.3
Organization expense—Spokane Bank	18,868	
Undivided profits	69,111,357	11.2
Total	618,657,679	100.0

PROGRAM ON CHARTERING FEDERAL AND INSURING SAVINGS AND LOAN ASSOCIATIONS

This joint activity is carried on by the Office of Applications.

Chartering Federal Savings and Loan Associations.—Section 5(a) of the Home Owners' Loan Act of 1933 authorizes the Board to provide for the organization, incorporation, examination, operation, and regulation of associations to be known as Federal savings and loan associations and to issue charters therefor.

These associations provide thrift and home-mortgage lending facilities in communities where such facilities are unavailable or inadequate. They are established by the granting of charters to newly created associations anywhere in the United States or its territories. State-chartered associations may also apply and, if approved, convert to a Federal charter.

The savings or share account of each saver in Federal savings and loan associations is insured up to $15,000 by the Federal Savings and Loan Insurance Corporation. The associations are subject to periodic examination by the Federal Home Loan Bank Board and are members of the Federal home loan bank system.

The following table shows membership, aggregate assets, and reserves and undivided profits of Federal associations for the years indicated:

	Membership	Assets in billions	Reserves and undivided profits
Fiscal year end—			
1950	1,515	$7.9	$513
1955	1,656	18.5	1,184
1956	1,709	21.6	1,419
1957	1,757	24.4	1,640
1958	1,787	27.6	1,887
1959	1,828	32.2	2,197
1960	1,856	36.4	2,493
1961	1,885	41.0	2,830
1962	1,922	46.6	3,195
1963	1,957	52.9	3,580
1964	1,969	58.9	3,945
1965	1,993	64.3	4,342
1966	2,031	68.6	4,744
1967	2,055	72.1	4,971

As shown, a steadily increasing upward trend in membership and assets is reflected. Assets have shown a rapid growth over the years. In the last 5 years they have increased by 54.7 percent from $46.6 billion at June 30, 1962, to $72.1 billion at June 30, 1967. Similarly, reserves and undivided profits for the same period have kept pace with this growth, increasing from $3.2 to $5 billion, an increase of $1.8 billion, or 56.2 percent.

The chart shown on the following page reflects the trend in assets of all State-chartered and Federal savings and loan associations at December 31 of the years indicated. Although the estimated number of State-chartered associations at December 31, 1967 (4,059) exceeded Federal associations (2,058) by 2,001, or 97.2 percent, the estimated assets of Federals ($75 billion) exceeded those of State-chartered associations ($68.1 billion) by $6.9 billion, or 10.1 percent.

This section of the activity includes the analyses of applications for Federal charter, branches, conversion, and bank system membership and recommendations thereon to the Board. The related workload increases in direct proportion to the upward trend in the business activity of insured institutions. The Federal-Charter Facilities and Operations Division processed 17 applications for new charters, 25 applications for conversion from State to Federal charter, and 116 applications for branches, or a total of 158 applications in fiscal 1967. It expects to process approximately 233 applications in the current fiscal year and 263 in 1962.

Insuring savings and loan associations.—Insurance protection is obligatory for all federally chartered associations. State-chartered institutions of the savings and loan type which apply for insurance and meet the Corporation's requirements are also insured.

In the underwriting process, the State-Chartered Facilities and Operations Division analyzes all factors bearing upon the financial condition and other aspects of applicant associations. Included among these are: Capital structure, assets, liabilities, reserve position, operating income and expense ratios, liquidity position, etc. Other considerations are character of management and directorate, and soundness of all policies and practices pursued in appraising and lending. All factors are evaluated in the light of local economic conditions and the trends and prospects of the general economy.

Public demand for protection of its savings makes it advisable for uninsured savings and loan associations throughout the country to seek insurance on the accounts of their savers or investors. The following table shows the number of insured institutions at June 30 of the years indicated and the net increase each year:

	Number of insured associations	Net increase
At June 30—		
1947	2,529	
1950	2,799	108
1955	3,472	102
1960	4,044	108
1961	4,160	116
1962	4,267	107
1963	4,386	119
1964	4,443	57
1965	4,483	40
1966	4,514	31
1967	4,488	−26
1968 [1]	4,520	32
1969 [1]	4,555	35

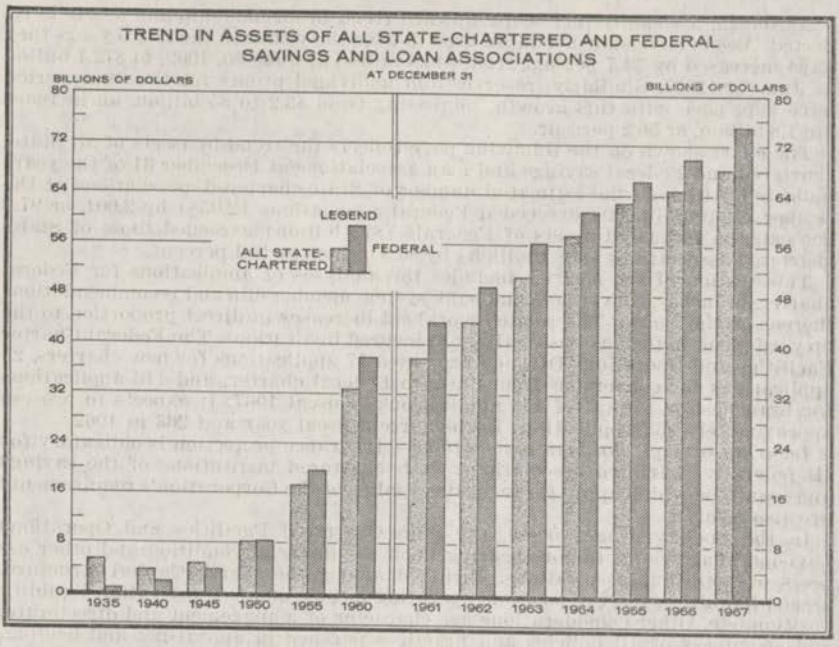
[1] Estimate.

As indicated, the 1967 figure is expected to increase by 32 associations in fiscal 1968 and by 35 in 1969, bringing the total at June 30, 1969, to 4,555.

There were 40 insurance applications processed in fiscal 1967. It is expected that 40 applications will be processed in the current fiscal year and 40 in fiscal 1969.

This section of the activity also processes a large variety of other types of applications relating to regulatory requirements. These types accounted for 2,565 case studies last year, and represented 95.3 percent of the 2,692 case studies made during the year. It is expected that case studies will total 2,812 in the current year and 3,003 in fiscal 1969.

The term "case study" refers to the analysis and evaluation of voluminous documents, such as articles of incorporation, constitution and bylaws, security



forms, passbooks formerly and currently issued to evidence savers' and investors' holdings, State supervisory examination reports, Federal eligibility examination reports, audit reports, annual financial reports, published financial statements, correspondence covering criticisms and actions by the State supervisory authorities, form of mortgage notes and related instruments, maps disclosing extent of lending territory, and sales plans and practices.

Personnel requirements.—The estimate of 49 positions for both phases of this activity reflects an increase of four positions over the current fiscal year. The new positions are two GS–12 financial analysts and two GS–5 clerk-stenographers. A more detailed outline of the duties involved in this joint activity and justification of the need for the new positions requested will be found beginning on page 90.

On a man-year basis there are 47.2 man-years in 1969 and 44.6 in 1968, an increase in 1969 of 2.6 man-years. Of the increase, 0.2 man-year represents delay in filling positions in the current fiscal year; the remaining 2.4 man-years represent the 4 new positions requested.

Mr. EVINS. You state that the public demand for protection of its savings makes it advisable for uninsured savings and loan associations throughout the country to seek insurance. The table on page 32 shows the number of insured institutions at June 30 of the years indicated and the net increase each year, 4,555 institutions are insured. There is a net increase of 35.

Mr. HORNE. It might interest all of you, Mr. Chairman, to know occasionally there is a failure of an uninsured association. There was one recently in one of our Midwestern cities. Quite a few people evidently thought it was insured and they wrote their Congressmen and their Senators and many wrote directly to the Board asking that the insurance corporation make good the money they had on savings in the institution.

Mr. EVINS. And they were not insured?

Mr. HORNE. No, sir.

Mr. EVINS. We will place in the record pages 34 and 35.
(The pages follow:)

PROGRAM ON EXECUTIVE DIRECTION AND STAFF SERVICES

The following offices and positions are included in this joint activity for fiscal 1969: Offices of the Chairman and board members (15); Office of the executive assistant to the Chairman (2); Office of International Home Finance (5); Office of Research and Home Finance (17); Office of the Secretary, immediate (18); Office of the General Counsel (54); Office of Personnel Management (14); Office of Public Affairs (8); and the Organization and Methods Division (3).

Executive direction.—The Board establishes the general policies for all operations under its control. It supervises the operations of the 12 regional banks and the examination of each bank at least annually.

It conducts hearings on applications for and issue charters for Federal savings and loan associations and prescribes regulations relating to their lending and other activities.

It is responsible for examination and supervision of all member institutions insured by the Federal Savings and Loan Insurance Corporation. It is the final authority for the administration of the insurance system, including approval or disapproval of applications for insurance and of requests from insured institutions to permit mergers, purchase of assets, consolidations, etc. It makes final determination of the course of action to be taken by the Insurance Corporation to prevent default in an insured institution as well as the method of settlement when an insured institution is declared in default.

Dissolution of the Home Owners' Loan Corporation, which was also a responsibility of the Board, was completed February 3, 1954. Correspondence and claims relating to the former Corporation's operations are now handled by the Board staff.

Staff services.—In the interest of economy, proper use of manpower and efficiency of operations, staff units of the Board, in addition to rendering services to the Board, also render services to the Insurance Corporation and to the Office of Examinations and Supervision. Such services are furnished by the Office of the Secretary, Office of the General Counsel, Office of Personnel Management, Office of Public Affairs, and the Organization and Methods Division.

Other common services furnished by the Board's staff are fiscal and housekeeping services; these are treated and discussed in this submission as a separate activity under the caption "Administrative Services."

The workload of most phases of this joint activity has increased in direct proportion to the growth and activity in the savings and loan business coupled with the development of conditions resulting from competitive factors in the savings industry and the mortgage market. The continued increase in the growth and activity of the savings and loan business has increased the workload of this joint activity in the following offices to the extent that additional personnel is requested in fiscal 1969 to keep abreast of the workload.

Office of the General Counsel: The estimate of 54 positions reflects an increase of two positions over the current fiscal year. The new positions requested are a GS–15 attorney-adviser and a GS–5 clerk-stenographer. Outline of the duties of the Office and justification of the need for the new positions will be found beginning on page 59.

Office of Personnel Management: The estimate of 14 positions reflects an increase of one position over the current fiscal year. The position is a GS–9 personnel technician. Outline of the duties of the Office of Personnel Management and justification of the need for the new position will be found beginning on page 78.

Office of Public Affairs: The estimate of eight positions reflects an increase of one position over the current fiscal year. The position is a GS–5 clerk-stenographer. Outline of the duties of the Office of Public Affairs and justification of the need for the new position will be found beginning on page 55.

Personnel requirements.—The estimate of personnel requirements for both phases of this activity provides for 136 position, an increase of four positions over the current fiscal year.

On a man-year basis, there are 131.3 man-years in 1969 and 120.4 in 1968, an increase in 1969 of 10.9 man-years. Of the increase, 8.5 man-years represent delay in filling positions in the current fiscal year; the remaining 2.4 man-years represent the new positions requested.

Mr. WYMAN. Did the depositors in that bank have notice they had these deposits in a bank that was uninsured, or were they laboring at the time they made their deposits under the mistaken conception that it was insured?

Mr. HORNE. Frankly, I do not know, that association not being a Federal-chartered association. If it had been it would be automatically insured, but being a State-chartered and not federally insured, we had nothing whatsoever to do with it. I rather doubt whether the people managing it had informed each saver it was not insured, but it would have been a matter completely in the hands of the State authorities as to whether or not such information was given out.

It may interest you to know further that some of the savers did take the case to court. I do not know all of the ramifications except the Supreme Court, by refusing to overrule the appeals court, in effect gives the uninsured savers a claim on the people who owned and operated that association.

Mr. WYMAN. As individuals?

Mr. HORNE. As individuals, yes, sir.

And that also has some ramifications so far as we at the Federal level are concerned, for example, or other State-chartered associations; that is, it gets into the question of what kind of information each saver ought to have about the soundness and operation of the association.

Mr. WYMAN. But in the last analysis, the question of whether the saver wishes to place his money on deposit in an institution that is insured or not insured is up to him, is it not?

Mr. HORNE. That is right; yes, sir.

SPECIAL STUDIES OF SAVINGS AND LOAN INDUSTRY

Mr. EVINS. We discussed earlier the special study being made by the Board. We will place in the record page 38.

(The page follows:)

PROGRAM ON SPECIAL STUDIES OF THE SAVINGS AND LOAN INDUSTRY

The Board is authorized by Public Law 89-426 (80 Stat. 141, 143), approved May 13, 1966, to conduct special studies of the savings and loan industry to be completed by December 31, 1968. A total of $500,000 was authorized for this purpose.

Pursuant to this authorization, the Board established an Advisory Panel and negotiated a contract in July 1966 with the University of Pennsylvania, Philadelphia, Pa., to conduct a study of the savings and loan industry. The purpose of the study is to evaluate the role of the industry as a financial intermediary and its position in the money and capital markets, particularly in the light of recent developments, and to determine methods for streamlining and improving the industry's operations, the functions of the Federal Home Loan Bank Board, and the operations of the Federal Home Loan Bank System in its role as a credit reservoir for the industry.

The Advisory Panel was appointed as liaison with the Director of Research, Prof. Irwin Friend, and approved the outline of the study submitted by the Director of Research. The Director of Research then assembled a professional staff of 21 persons, including six at the University of Pennsylvania and the remainder at other universities. The full staff was not assembled until April 1967. Nevertheless, substantial preliminary work was performed on the study between August

and April. Basic data were supplied from Board files to Professor Friend during the first half of 1967 and these data were processed during the summer of 1967 so as to put them in a form which could be used by the various scholars.

On November 3, 1967, the Director of Research, pursuant to the contract, presented his third progress report. That report shows that some of the authors have developed extensive preliminary working papers and that all others, except two, are in the process of performing research on their topics. The two authors who have not performed any work are not obligated to commence their research until mid-1968.

So far, not enough work has been performed by any author to permit the statement of any conclusions or results.

During fiscal year 1967, the Board expended $88,000 of the total authorization of $500,000; $187,000 is estimated to be expended in the current fiscal year and $225,000 in fiscal year 1969.

OFFICE OF RESEARCH AND HOME FINANCE

Mr. EVINS. We hope this study will come up with some good recommendations and the Board will implement them.

You state the Office of Research is responsible for economic analysis. You have 17 jobs. What progress are you making?

Mr. HORNE. The information we get from that office is almost, I would say, necessary for the intelligent operation of the Board.

Mr. Schwartz did not return with us. He is the Director of that.

For years the Federal Home Loan Bank Board, in contrast to the Federal Reserve Board, had no research office at all. In my opinion it is very necessary. For example, we go to it for information as to how many associations do this or how many do that or how do we compare with commercial banks in several areas.

I might say that the amount of money we spend as compared to our size is infinitestimal, I mean so much smaller than what the Federal Reserve Board spends.

Mr. EVINS. It is a question of whether you need 17 jobs. You have a special study that is being conducted.

Mr. HORNE. This is a day-by-day, week-by-week, month-by-month source of information, Mr. Chairman. It may be that this office will also be very helpful to us once we know what the special study recommendations are going to be toward implementing their recommendations.

Mr. EVINS. Place in the record page 51.

(The page follows:)

OFFICE OF RESEARCH AND HOME FINANCE

	1967 actual	1968 estimate	1969 estimate
Positions	17	17	17
Man-years	10.1	14.6	16.6
Net salary	$125,874	$182,490	$213,476

FUNCTIONS AND RESPONSIBILITIES

This Office is responsible for economic analysis in areas that are vital to the development and execution of Board policy. These functions can be viewed as falling into three categories:

1. The development of an adequate research program to supply the Board with required economic intelligence; this includes providing guidance to the Data Management Division as to data requirements.

2. The development of policy papers based on research to cover such matters as advances policy, reserve regulations, lending regulations, entry of new associations, merger policies; evaluation of economic aspects of legislation; and other policy programs requiring an economic evaluation of the thrift industry, mortgage market, and housing.

3. Contacts with other agencies, including the Treasury, the Council of Economic Advisers, the Federal Reserve System, the Bureau of the Budget, and the Department of Housing and Urban Development; coordination of systemwide research projects; contacts with universities and other public and private organizations.

INVESTMENT BY U.S. SAVINGS AND LOAN ASSOCIATIONS IN LOANS ABROAD

Mr. JONAS. If you will return to the Office of International Home Finance, I would like to discuss that with you.

Mr. HORNE. All right, sir.

Mr. JONAS. As I understand the law, the U.S. savings and loan associations are permitted to invest 1 percent of their assets in loans abroad.

Mr. HORNE. If insured by the Agency of International Development; yes, sir.

Mr. JONAS. That is restricted now to the Western Hemisphere?

Mr. HORNE. Yes, sir.

Mr. JONAS. But it is proposed to expand that lending and guaranteeing authority to countries outside this hemisphere?

Mr. HORNE. Yes, sir.

Mr. JONAS. Have any of our associations loaned any of their money out under this arrangement so far?

Mr. HORNE. I do not know the full details of that.

Mr. RAND. There have been some commitments made, but no money has gone forth yet.

Mr. JONAS. To what extent?

Mr. RAND. I do not know. It is a very insignificant amount at the present time. It is just really getting underway.

Mr. JONAS. Are these associations anxious to do this or are they being pressured to do it?

Mr. HORNE. They are not being pressured, Mr. Congressman. Some of them are anxious to. As a matter of fact, many of the associations—and I commend them for it—have taken the lead in helping the Latin American countries to establish thrift systems.

Mr. JONAS. I do not know whether an association that has not got enough money to lend at home has any business investing 1 percent of its assets in a saving and loan institution outside the United States.

Mr. HORNE. I think the fact they have had a shortage of money since the program was made effective by Congress has been one reason there has been so little obligated or committed by the associations.

POOLING ARRANGEMENT FOR LOANS

Mr. JONAS. It is another foreign aid program. If it is expanded outside the Western Hemisphere, you will add to the balance-of-payment problem.

I notice in the justification you are planning a pooling arrangement. Will you explain what you propose there, to have some Federal home loan bank designated as agent for channeling pool investment funds?

Mr. HORNE. What is meant by this, Congressman, is the Federal Home Loan Bank of New York, we will say, acting for its member

institutions, could be the vehicle through which the administrative handling and prorating could be accomplished.

Mr. JONAS. I understand that. It is to solicit pledges from U.S. associations, accept and invest funds in short-term securities.

Mr. HORNE. I think what would happen there is that if Congress passes this particular piece of legislation, which I think is now resting in the Senate if I remember correctly—what would happen rather than solicitation, the members really would be apprised of this authority, which we would have to do under our rules and regulations anyhow, that is, keep the members informed.

I can tell you there would be no pressure so far as the Board is concerned put upon any association that they participate in this.

Mr. JONAS. I would assume if any pressure, it would come from AID or the State Department.

Mr. HORNE. They would not have any authority over forcing them.

Mr. JONAS. They would have authority to go out under this law and try to persuade them to participate. There will be no pressure put on any institution to participate in the program, it will be strictly voluntary?

Mr. HORNE. Yes, sir.

Mr. JONAS. How long will the loans run?

Mr. HORNE. I assume they could run as long as the AID guarantee provided.

Mr. RAND. At the present time, the loans in Latin America are in the area of 10 or 15 years as I understand it, and it is not traditional to go into a long-term loan. So I would assume the first commitments here would be on a shorter basis.

CONTROL OF INTEREST RATES

Mr. JONAS. Who will control the rate of interest?

Mr. TREVAS. That would depend on the kind of guarantee AID gives.

Mr. JONAS. My information is that it is considerably higher than the rates in the United States.

Mr. TREVAS. It is. Money is short there.

Mr. HORNE. What would happen with an AID guarantee, Congressman, unless they proceed differently from what it has done this far, AID would say to the association making the loan—and they would also, along with us, pass on where the loans are going to be made. AID would give the guarantee and prescribe the interest paid to the association making the loan.

Mr. JONAS. It would be quite a temptation to association X to take one of these Government guarantees and lend money to some foreign association at 8 or 10 percent interest.

Mr. HORNE. This might be some inducement. But it is limited under the law that Congress passed to 1 percent of the savings of the particular association involved. So it could go up to 1 percent.

Mr. EVINS. You are providing for pooling by administrative action, are you not?

Mr. HORNE. We could do this, yes.

Mr. JONAS. And sales of participation certificates?

Mr. HORNE. Let me say one thing if I may: The purpose of this program is to—I realize Government is involved through AID guaran-

tee, but the main purpose of the program and what the savings and loan industry itself has been doing in recent years in the Latin American countries is to develop a private enterprise system which has worked so successfully here at home and to encourage the people there to lift themselves up by practicing thrift and being able to get low-cost housing.

(Off the record.)

Mr. HORNE. Again the main emphasis I would like to make is that its origin is from the industry itself.

Mr. EVINS. With a little encouragement by AID which increases the outflow of the dollars. We just caution the Board to see what they can do about it.

Mr. JONAS. You do not have the insurance program operating outside the United States, do you?

Mr. HORNE. No, sir. You mean of the savings accounts program?

Mr. JONAS. Yes.

Mr. HORNE. No, sir.

Mr. WYMAN. Is there any limitation on AID as to the rate of interest?

Mr. HORNE. I think that Congress imposes some limitation on interest, but I know Congress does impose a limitation on AID's guarantee power.

Mr. WYMAN. A limitation on the guarantee power, however, having to do with the ceiling and amount?

Mr. HORNE. That is my understanding.

EFFECT OF INFLATION ON LOAN PROGRAM

Mr. WYMAN. So if a currency of a particular foreign nation should be at all shaky, the guarantee would not only take into account the interest rate, whatever was needed, but it would underwrite the currency situation in terms of convertibility figured out at the time the guarantee was entered into. Would it not have to be that way?

Mr. TREVAS. A lot of these AID agreements have to be repaid in American currency.

Mr. HORNE. The rate of interest that would be allowed by AID, and under your description might also be guaranteed by AID, would be in terms of its earnings in American dollars.

Mr. WYMAN. But that is not an escalation clause. If there is inflation in that country, which sometimes happens in these countries, the repayment would be computed as of the time the agreement with the local bank was entered into; would it not?

Mr. RAND. I would like to answer that.

This is a very minor part of the program so none of us on the Board are completely familiar with it, but I have been inquiring in the last few days about this program. Some of the countries in Latin America have built-in escalation clauses. And the rate goes up with the cost of living or some other index they have.

As a matter of fact, I think most of the Latin American countries have similar escalation clauses whereas in this country we have not developed that to much of an extent. They have so much inflation in that area it is almost necessary.

Mr. HORNE. They have in Chile.

Mr. WYMAN. That is what I mean. That is what I had reference to. If this is the case and if you have all of these guarantees, you say it is a very small part of your program, but with 1 percent of the total value here, we are talking about billions of dollars potential.

Mr. HORNE. About a billion dollars potentially.

Mr. RAND. We might add that so far nothing has been spent in this program.

Mr. WYMAN. I understand.

Mr. RAND. We will get into that area more thoroughly in time, I suppose.

Mr. JONAS. Is not this legislation up for amendment now?

Mr. HORNE. It is up on the Senate side. The legislation providing AID guarantee was passed, I believe, 2 years ago, but at the time it was passed, and I do not recall these figures, I think a little over $200 million was made available to AID. Congress controls, of course, how many dollars AID would have at its disposal to provide a guarantee.

PROCEDURE FOR PROCESSING LOANS

Mr. JONAS. Can you tell us for the record how this will work? The X association or the bank pools funds from a number of associations and they want to make an investment. Say a million dollars. And they get AID's guarantee.

Mr. HORNE. Yes, sir.

Mr. JONAS. They have to send a million dollars down to X country and they will lend it out to their customers and they will repay those loans in the local currency of that country. Where will the association in X country get the dollars to repay the loan?

Mr. HORNE. This is where AID's guarantee works.

Mr. JONAS. I am trying to keep AID from having to pay off on this guarantee. If they do not get the dollars and cannot repay us in dollars, it is another giveaway program.

Mr. HORNE. If it works it is supposed to be self-supporting. But if it has all the safeguards we envisage, we think it would be, but FHA is involved in part of this to the extent of reviewing the loan, and AID is involved; and somebody sitting in Santiago, Chile, for example, could not willy-nilly apply for the loan and get the loan.

The application is processed, the application is looked at by the institution. It is reviewed by the institution making the loan, by AID and by FHA underwriters reporting to AID. So precautions are taken in those countries similar to the ones we take here in making the loan. AID would be riding herd on the safety and the soundness of the investment.

(Off the record.)

Mr. JONAS. This is a potential tremendous loss right here. I do not see how the borrowers are going to generate the dollars to pay back these loans.

Mr. EVINS. The Federal Home Loan Bank Board did not envision this. They got through the back door with AID.

Mr. HORNE. This is legislation. I have forgotten its origin, but I believe it was enacted about 2 years ago.

OFFICE OF PUBLIC AFFAIRS

Mr. EVINS. We will take a look at the Office of Public Affairs. You want eight people. The Board uses this Office to carry Board actions to the public essentially through public information media—the press, magazines—professional, trade, and lay—radio, television, visual media. You have a lot of information, Mr. Chairman.

Mr. HORNE. Yes, sir. We could double the staff and still hardly meet all of the requests, but of course I am not asking for doubling of the staff.

Mr. EVINS. You state here you have a 32-page monthly magazine.

Mr. TREVAS. We are going to get away from the eight-page digest to the 32-page magazine.

Mr. HORNE. This is something many people in industry have wanted for some time, but we simply have not been able to provide it.

Mr. EVINS. Was it not Justice Brandeis who said that big business becomes inefficient? You have been always an efficient body. You are getting big now.

OFFICE OF GENERAL COUNSEL

Next is the General Counsel's Office.

We will place in the record 59 through 68.

(The pages follow:)

OFFICE OF GENERAL COUNSEL

	1967 actual	1968 estimate	1969 estimate
Positions	46	52	54
Man-years	36.9	46.4	51.8
Net salary	$437,120	$551,585	$657,690

Functions and responsibilities

This Office renders legal services to and is responsible for the conduct and coordination of all legal matters, including litigation in the following areas:

Federal home loan banks.—The Office is responsible for passing on all legal questions relating to operations of the banks under the Federal Home Loan Bank Act and the regulations promulgated thereunder. It prepares suggested legislation, prepares or participates in the preparation of new regulations and amendments to existing regulations, reviews the opinions and rulings of counsel for the banks which require action by the Board and generally advises the Board on all legal questions concerning the bank system and bank operations. In addition, the Office renders legal advice to the Board's Office of Federal Home Loan Bank Operations and to the fiscal agent of the banks in connection with the issuance of consolidated obligations.

Federal savings and loan associations.—The Office provides legal services to the Board in connection with mergers or other corporate reorganizations of such associations and renders legal opinions on petitions for purchase or sale of assets, mergers, dissolutions, reorganizations, or conversion to State-chartered associations. Legal services in connection with mergers have, as a result of recent Supreme Court decisions, been expanded to include legal antitrust evaluations. The General Counsel advises the Board on all legal matters relating to the appointment of supervisory representatives in charge, conservators or receivers for such associations. Staff attorneys of the Office act as counsel for the Board in administrative hearings in connection with the appointment of conservators or receivers and in court review of decisions of the Board in such matters.

In addition, the Office renders opinions to the Board, its staff sections, and the savings and loan industry, on a wide range of questions concerning the operations of Federal associations, including the creation and operation of agencies and branch offices, powers of directors, distribution of earnings, donations and contri-

butions, loans and investments, powers, liquidity requirements, proxies and voting, issuance of securities and taxation.

Staff attorneys act as hearing officers in agency hearings with respect to applications filed for Federal charter and applications for branch offices of existing Federal associations. In such hearings, staff attorneys also act as counsel for the agency, when required.

Federal Savings and Loan Insurance Corporation.—The Office acts as legal adviser to the Federal Savings and Loan Insurance Corporation and furnishes hearing officers, and counsel when necessary, for the Corporation in hearings held upon applications for insurance of accounts.

The Office renders legal opinions on matters arising out of the examination and supervision of insured institutions, including questions of lending limitations, sales plans and practices, advertising, reserve requirements, and lending territory. In addition, it furnishes legal services in connection with the liquidation of insured institutions both at the preparatory stage and during actual liquidation.

The Office prepares suggested legislation; prepares new regulations or amendments to existing regulation; reviews and analyzes comments on proposed and existing regulations; defends and prosecutes litigation; supervises the activities of fee attorneys and generally advises the Board on all legal questions concerning the operation of the Corporation.

Every year there are changes in the laws of a number of States which affect the operations of savings and loan associations, both State and federally chartered. These changes substantially affect the workload of the Office of the General Counsel.

Workload and personnel requirements

Legislation Division.—This Division is responsible for the drafting of all legislation submitted by the Federal Home Loan Bank Board to the Bureau of the Budget and to Congress and performs all legal work in connection with the legislative activities of the Board.

The Division develops justifications for legislation proposed by the Board: reports to the Bureau of the Budget and to Congress on proposed or pending legislation as well as preparation or legal review of committees; and analyzes pending or proposed legislation which would affect Board operations or is otherwise of concern to the Board.

So far as concerns legislative proposals of the Board, the workload of the Legislation Division at the present time is centered around proposals designed to (1) strengthen the statutory provisions on savings and loan holding companies by the amendment of section 408 of the National Housing Act, as amended (S. 1542 and H.R. 8696, 90th Cong.), (2) provide for the chartering and regulation by the Board of Federal savings banks (S. 1919 and H.R. 10745, 90th Cong.), and (3) provide for a system of certification of real property appraisers by suggested State legislation (submitted to the Council of State Governments for consideration by the State legislatures in their 1968 session).

Pending proposals not sponsored by the Board but as to which its views have been requested include S. 1492 and S. 1493 (relating to the establishment of a secondary market for conventional mortgages), S. 5 (the so-called truth-in-lending legislation), S. 1955 (which if enacted would provide for the chartering and regulation by the Board of Federal savings associations), and numerous other proposals.

The workload of the Division during fiscal year 1968 is at a high level because of these proposals and pending bills and it is estimated that it will remain at a high level during fiscal 1969.

Despite this high level of activity, the Legislation Division should be able to meet its responsibilities in fiscal year 1969 without additional staffing.

Opinions and Regulations Division.—Chairman's Order No. 170 dated May 19, 1967, abolished the Office of Regulations and its functions were transferred to the Office of the General Counsel. Within the Offices of the General Counsel the functions of the former Office of Regulations are being conducted by the Opinions and Regulations Division. This Division prepares drafts of proposed regulations and proposed amendments to existing regulations as requested by the Board or by the Chairman and other members and officials of the Board, reviews all such proposals for legal sufficiency and performs all legal services in connection with the preparation and promulgation of regulations or amendments thereof.

These regulations consist primarily of implementations of, or exercise of regulatory authority under, the three basic statutory provisions relating to the

Board's operations; namely, the Federal Home Loan Bank Act, the Home Owners' Loan Act of 1933, and title IV of the National Housing Act.

Fields covered by these regulations and amendments include the election and appointment of Bank directors and the organization and operations of the Banks including the handling of securities, investments, advances, and required liquidity; the chartering, operation, and regulation of Federal savings and loan associations; the conservatorship, receivership, and liquidation of such associations; the admission of applicants to Bank membership and to insurance by the Federal Savings and Loan Insurance Corporation, and the termination of such membership or such insurance; the advertising, sales plans and practices, lending activities and reserves of insured institutions, and the practice and procedure in proceedings before the Board, including hearings.

New regulations and amendments to existing regulations have not only greatly increased in number but have, of necessity, been broadened in scope and effect and become more complex. Changes in basic legislation have required many of the regulatory changes; however, most have been required as a result of adjustments in the national economy, the growth of the savings and loan industry and the increased complexity of savings and loan operations. In addition, the Board has found it necessary to regulate areas of operations which heretofore have not required regulatory restriction. These factors have required substantial adjustments in the Office of the General Counsel in order to meet the increased workload in the field of regulation.

During the fiscal year 1967 regulatory activity remained at a very high level. Fifty-six new regulations and amendments to existing regulations were adopted by the Board. During the present fiscal year, additional regulatory amendments will be required to continue to meet the required changes in operational programs.

There is every indication that the regulatory workload of the Office will continue to expand through fiscal year 1969 as the magnitude, momentum and complexities of the savings and loan industry increases. The new areas into which the industry is expanding, coupled with the stresses brought about by increasing competition among financial institutions, will doubtless require the adoption of new regulations or the amendment of existing regulations.

Changes in basic legislation governing the investment powers of Federal savings and loan associations and changes in the necessary implementing regulations have, in recent years, resulted in a substantial increase in the variety and complexity of the problems presented to the Division for opinion. Federal associations, originally created primarily to provide mortgage financing for homes, have been authorized to broaden their operations to permit investment in service corporations and in real estate located within urban renewal areas and to broaden their lending operations to include such specialized fields as loans for a college or university education, loans to finance the acquisition and development of land, loans to provide housing facilities for the aging, and loans to business development credit corporations. Such additional investment authority, coupled with extensions of lending authority geographically, both as to whole and participation loans, have increased the complexity of the operations of Federal associations and resulted in the submission of more complex operational plans and programs to this Office for legal review and analysis.

Like Federal savings and loan associations, State-chartered savings and loan associations insured by the Corporation have had their investment and lending authority broadened and the geographic limitations governing their operations extended. Utilization by the institutions of such new tools has brought them into more highly competitive areas, inevitably producing a greater number and greater complexity of supervisory and legal problems directly affecting the risk of the Corporation.

The questions on which opinions are sought usually result from a direct inquiry from a savings and loan institution or examination of an institution subject to the Board's jurisdiction. In many instances the legality of a transaction involving many millions of dollars is brought under scrutiny and the inability of the Division to promptly determine the legality of such transactions can have a deleterious effect on the institution itself or, through the passage of time, act to compromise the supervisory position of the Board.

Because of the foregoing, it is anticipated that the workload of the Opinions and Regulations Division will continue at its present high level during this fiscal year and in fiscal year 1969, both in the preparation of regulations and in the volume of requested legal opinions. However, it is believed that the Divi-

sion can carry out its duties and meet its responsibilities to the Board without the assignment of additional personnel.

Litigation Division.—This Division is responsible for litigation involving the Board and the Federal Savings and Loan Insurance Corporation.

During fiscal year 1967, the Division opened four cases under section 407(b) of the National Housing Act, as amended, and one case under section 5(d)(6) of the Home Owners' Loan Act, as amended; it closed five section 407(b) cases and one section 5(d)(6) case. Pending as of July 1, 1967, were nine section 407(b) cases, a decrease of one case under July 1, 1966.

During the current fiscal year it is estimated that seven section 407(b) cases and one section 5(d)(6) case will be opened. This estimate is based upon the fact that as of July 1, 1967, serious problem cases were pending in the Office of Examinations and Supervision on which neither 407(b) nor 5(d)(6) proceedings were in progress.

It is estimated that the average 5(d)(6) or 407(b) case, if carried through all the administrative and judicial steps possible, involves approximately 300 man-days of work. The time would be consumed in preliminary consultations with the supervisory authorities, research of the facts, preparation of the 407(b) letter or 5(d)(6) resolution, preparation of the case for hearing, conduct of the hearing, handling of the appeal, if any, at the U.S. district court, handling of the appeal at the court of appeals and any conferences or negotiation for settlements taking place during the period.

There were pending, as of July 1, 1967, 41 litigation cases, including matters relating to the liquidation of assets acquired by the Insurance Corporation under section 406(f). In addition, there are approximately 317 cases in which the Insurance Corporation has elected to accept deeds pending foreclosure rather than proceed through judicial foreclosure.

Because the Litigation Division must work with deadlines always present on section 407 and section 5(d) cases, it has no backlog, as such. However, on several occasions it has been necessary to proceed with administrative hearings in 407 cases on the basis of staff availability rather than on the merits of the case and, for the first time in history, to utilize special counsel to prosecute a termination proceeding. Because of the anticipated large increase in its workload for the current fiscal year, the Litigation Division will not be able to perform its tasks as it should. More time will have to be devoted to the large number of projected section 407(b) and section 5(d)(6) cases. Less time will be available for supervising the work of outside counsel in connection with liquidations. Accordingly, it is necessary that another attorney be assigned to the Division. This forecast is made without taking into account the undoubted emergency situations which will arise in the current fiscal year.

An increase in the Litigation Division's workload in fiscal year 1968 is expected because of the large number of problem cases and the huge volume of assets owned by the Insurance Corporation which must be liquidated. In fiscal year 1969 the volume of assets managed by the Corporation could aggregate anywhere from $150 to $300 million.

General Division.—In addition to its responsibility for conducting the hearings on the chartering of new Federal associations, the establishment of branch offices of existing Federal associations and insurance of accounts of State-chartered institutions, the General Division is responsible for advising the Office of Applications in connection with applications for permission to organize and applications for branch offices. Assignments to this Division are also drawn from the Office of the Secretary and, to some extent, the Office of Examinations and Supervision. Near the end of fiscal year 1966, the hearing section of the General Division has overcome personnel and administrative problems which had caused serious delays earlier in the fiscal year and it is anticipated that the present hearing section staff, consisting of three attorneys and two clerk-stenographers, will be adequate to meet its responsibilities during the forthcoming fiscal year.

Because of precise eligibility and other requirements in the regulations governing the chartering of new Federals and the establishment of branch offices, the Office of Applications is requesting a legal opinion on each application for permission to organize or establish a branch office. It is estimated that, on the average, each such application requires an hour of an attorney's time and one-half hour of secretarial work. At the present time approximately 300 applications of this type are being received annually by the Office of Applications.

Approximately nine legal antitrust evaluations in connection with merger applications, each requiring approximately 10 man-days, are prepared annually

in the General Division. Each evaluation requires a thorough examination of detailed information, primarily statistical, which the applicants are required to submit. Examination of such data, which requires approximately 3 man-days, is designed to disclose the salient points and any deficiencies in the submission so that additional information can be sought before the analysis itself is commenced. The initial phase of the analysis is a determination and a recording of relevant geographical data to provide a basis for the evaluation. This step, requring approximately 2 man-days, is followed by an evaluation of a proposed merger in the light of the antitrust statutes and court decisions, particularly the six leading cases in the Supreme Court. The evaluation itself, involving an analysis of competitive overlap, degree of market concentration produced and amount of competition eliminated, requires approximately 4 man-days, which time includes the actual writing of the evaluation. An additional man-day is required for review by the Division Chief and General Counsel and for related consultation.

Despite the existing high level of the workload of the General Division, and allowances for reasonable growth during the fiscal year, it is anticipated that the Division can meet its responsibilities in fiscal year 1969 without the assignment of additional personnel.

Manual Division.—Chairman's Order No. 170, dated May 19, 1967, established within the Office of the General Counsel a Manual and Information Compliance Division to provide for the creation, publication, maintenance in a current status and distribution of a manual of the statutes, regulations, policy statements, rulings, and General Counsel's opinions relating to the Board's functions. In addition, it is the responsibility of that Division to provide for compliance with the provisions of the Freedom of Information Act including the publication of appropriate material in the Federal Register and the making available of appropriate information to the public.

Initial staffing of the Division by the Office of the General Counsel consists of three attorney positions, Grades GS–15, GS–14, and GS–13, a subprofessional administrative officer, Grade GS–12, and a clerk-stenographer, Grade GS–5. In addition, this staff has been supplemented by the detail of three clerical positions to aid in the establishment of the Division and its early operations.

While staffing of this Division is in large measure conjectural without full knowledge of the nature and extent of its workload, it is our present view that the Division can carry out its assigned tasks without the assignment of additional personnel.

Immediate Office.—At the beginning of the current fiscal year, arrangements were made with the General Services Administration to survey the files and the file systems employed in this Office with a view toward improving our file systems to expedite the retrieval of information, reduce space required for files and generally promote efficiency in the Office. The project by GSA is continuing; however, we have been able to determine that one of the principal shortcomings in the maintenance of practicable and usable file systems is the fact that no one person has heretofore been fixed with a continuing responsibility to maintain our file systems. It is anticipated that substantial cost reductions and time saving can be accomplished with a more effective file system. However, unless a position is added to the staff of this Office to provide us with a full-time clerk to be responsible for filing and maintenance of the files, the new system being prepared under the auspices of GSA will soon fall short of its potential.

Budget summary

This estimate, which provides for 32 attorneys and 22 clerical positions, represents an increase of two positions over the 52 positions provided for the current fiscal year. The 52 positions include six positions from the Office of Regulations which were transferred to this Office by Chairman's Order No. 170 dated May 19, 1967. Added would be one attorney position, grade GS–14, and one clerical position, a clerk, grade GS–5. The attorney position would be used to implement the Litigation Division of this Office; the clerk position would be used in the Immediate Office of the General Counsel.

Stated briefly, the reasons for the additional positions requested are as follows: Protracted administrative hearings leading to termination of a member's insurance or the appointment of a conservator or receiver for a Federal association, handled by the Litigation Division, have continued at a high level under adverse economic pressures on the industry. For the first time in the Board's history, it was necessary during the past fiscal year to utilize outside special counsel to represent the Board in the prosecution of a termination of insurance pro-

ceeding. The requested attorney position would be allocated to the Litigation Division to help meet its requirements.

The remaining position requested, a clerical one, is for the Immediate Office of the General Counsel. It represents a file clerk in charge of maintenance of the central files for the entire Office to implement a new filing system being developed following a survey of the filing system now in use in this Office by the General Services Administration.

The fragmented and somewhat unsystematic nature of the filing arrangement in use by this Office is a drain on the time and efficiency of all its members.

On a man-year basis there are 51.8 man-years in 1969 and 46.4 in 1968, an increase in 1969 of 5.4 man-years. Of the increase, 4.2 man-years represent delay in filling positions in the current fiscal year; the remaining 1.2 man-years represent the new positions requested.

Mr. EVINS. You want 54 positions, up from 46 two years ago. Your caseload is shown on page 64.

The Litigation Division opened four cases under the National Housing Act as amended, one case under section 5(d)(6) of the Home Owners' Loan Act. You closed five section 407(b) cases and one section 5(d)(6) case. And pending as of July 1, 1967 were nine section 407(b) cases, a decrease of one.

Mr. TREVAS. That is termination of insurance, a judicial type proceeding.

Mr. EVINS. Do you have to file a petition in court to take away the insurance?

Mr. TREVAS. We have to hold hearings according to the law.

Mr. HORNE. And we have to go down a long road to establish substantial reasons for doing it.

Mr. TREVAS. The total number of employees in fiscal 1968, in the Office of the General Counsel includes six positions absorbed from the separate Office of Regulations which was abolished.

Mr. EVINS. Where is the General Counsel?

Mr. MOSCOV. Here.

Mr. EVINS. Tell us about your workload. Is it pretty heavy?

Mr. MOSCOV. Quite heavy in drafting new regulations and interpreting existing regulations, and we have large undertakings in the litigation area.

Mr. EVINS. You have a good staff there.

Mr. MOSCOV. Thank you. Yes, we do. Thirty-one of the staff are attorneys and the rest are clerical employees. If you were to grant our request the number of attorneys would be moved up to 32.

ESTABLISHMENT OF MANUAL DIVISION

Mr. EVINS. Manual Division. Chairman's Order No. 170 established within the Office of the General Counsel a Manual and Information Compliance Division to provide for the creation, publication, maintenance in a current status and distribution of a Manual of the statutes, regulations, policy statements, rulings and General Counsel's opinions relating to the Board's functions. All of the institutions know what the Board's instructions are, do they not?

Mr. HORNE. They change from time to time, of course. We try to update and codify our basic statutes and regulations. This is something the industry has been urging the Board for several years to bring about. We finally felt we could undertake that program. We got it underway last year.

Mr. Moscov. There is no present official Federal home loan bank collation of all of the helpful materials which a lawyer or a member of the public might want in deciding how to operate in a particular area. This is an effort to have one official publication containing a coherent organization of all our materials such as rules, rulings, and regulations.

Mr. Evins. You say approximately nine legal antitrust evaluations in connection with merger applications are prepared annually in the general division.

Mr. Moscov. Yes, sir. In considering merger applications we are pretty much tied to the same requirements the banking industry is tied to, and because of recent court decisions in this area, we have to make antitrust evaluations under the Clayton and Sherman Acts.

Mr. Evins. At the beginning of the year, arrangements were made with GSA to examine your files? What were the results?

Mr. Trevas. They have suggested centralizing it, and one of the two positions is for a clerk who would do the work of centralizing the files so the office could operate more efficiently.

Mr. Evins. You also state in addition to the General Counsel you have an outside special counsel.

Mr. Trevas. That was because the workload on the termination cases exceeded our capacity to keep abreast of them. This is to eliminate outside hiring.

Mr. Evins. You say this would help prosecute the insurance proceedings. Did you file the proceedings and then employ counsel outside to try the case?

Mr. Moscov. In one case, because our litigation division at the time was too busy to handle it. That is more costly than having our own attorney handle the matter and that is one reason we are requesting one more attorney.

OFFICE OF AUDITS

Mr. Evins. The Office of Audits. You want an increase from 13 to 14.

Mr. Trevas. One position of GS–5.

Mr. Evins. You indicate the functions. You have a score of things for the Audit Division to do. Page 73 shows the workload data.

Expenses are up 24 percent. Disbursement vouchers, up 9 percent. Here is the number of issues held. There is a 34-percent increase in the number of issues held.

Mr. Trevas. This is for the purpose of showing an increase in what they have to do.

Mr. Evins. We will place in the record 69 through 73.

(The pages follow:)

OFFICE OF AUDITS

	1967 actual	1968 estimate	1969 estimate
Positions	13	13	14
Man-years	11.6	12.6	13.6
Net salary	$147,840	$168,694	$180,541

Functions and responsibilities

The Office of Audits has direct responsibility for the verification and audit of accounts and records and independent appraisal of the activities of the Federal Home Loan Bank Board and the Federal Savings and Loan Insurnce Corporation, and for the audit and examination of the 12 Federal Home Loan Banks, including their fiscal agent, together with responsibility for reports of deviations from compliance with applicable laws, rules and regulations, applicable general and specific Government standards and statutes, and policies of the Board.

The functions of the Office of Audits are:

1. The postauditing and reporting as to the accuracy and adequacy of books of account, ledgers, controls, vouchers and other records of the Insurance Corporation, the Federal Home Loan Bank Board, and the Federal Home Loan Bank System.

2. The survey and examination of the Agency's Offices and Divisions and the reporting of deviations from established procedure.

3. The annual and any special audit and examination of the 12 Federal Home Loan Banks as required by statute and the preparation of reports in connection therewith, specifically determining that the Banks are operating in conformity with the Federal Home Loan Bank Act, as amended, the regulations applicable to the Federal Home Loan Banks and the administrative policies incident thereto; counting for, either by inspection or direct confirmation, all assets and liabilities of such Banks; inspection at the present time of 975,000 mortgages or their equivalent held by Banks either as collateral or for safekeeping and the inspection or accounting for by direct confirmation of custodians of $2.6 billion of investment securities held in like status; the audit of the books and records of the Banks in detail when warranted and/or test check and sampling.

4. Annual or special audits of the Office of the fiscal agent of the Federal Home Loan Banks.

5. Any special reports or surveys as required by the Federal Home Loan Bank Board.

6. Liaison with Civil Accounting and Auditing Division and the Accounting and Auditing Policy staff of the General Accounting Office; the Office of the Commissioner of Accounts, U.S. Treasury Department; and the U.S. Bureau of the Budget in respect to fiscal matters, excluding budgetary operations.

Workload and personnel requirements

Audit of Board and Insurance Corporation.—The personnel currently engaged in the verification and audit of the accounts and records of the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation, including the survey and examination of the Offices and Divisions, consists of the Director, Associate Director, and Secretary to the Director. This complement has been, and will continue to be, augmented from time to time by the services of the bank examiners when necessary. This assistance is equal to one man-year of bank examiner's time.

These audits and surveys are also designed for use by the Civil Accounting and Auditing Division, General Accounting Office. This enables the General Accounting Office to reduce the scope and cost of a detailed audit which otherwise would be required by them under the Government Corporation Control Act.

The volume of internal audit activity has been increasing progressively each year, due to growth of the savings and loan business and due to additional program activity authorized by statutory amendment. The increase in internal audit workload during recent years is indicated by the comparison of certain workload factors shown in the table on page 73.

Examination of Federal home loan banks.—The bank examining staff consists of a chief bank examiner, eight field examiners, and one audit clerk. In addition to the responsibility for the examination and audit of the 12 regional banks and the Office of the Fiscal Agent, the bank examining staff assists on the internal audit of the Board and the Corporation. The work on the internal audit program is accomplished by having one bank examiner continuously detailed to the Washington office (this detail is rotated among examiners) and with the entire bank examining staff assigned to duty in the Washington office at various times for a total of 30 days per year.

On the basis of the foregoing, the number of examiner days available per year for examination and audit of the banks is computed as follows:

Days in year	365
Less:	
Saturdays and Sundays	104
Holidays	8
Annual leave, sick leave, and other nonavailable days	35
Days in home office	30
Total	177
Examiner days available	188

During fiscal 1967 examination and audit of the regional banks required approximately 0.141 man-day per million dollars of assets. Procedures have been reviewed and modified over the past few years and are now considered at the minimum level necessary to maintain the overall strength and effectiveness of the program. Therefore, the future growth of the bank system will require proportionate expansion of the bank examining staff.

Over the past 5 years the regional banks have grown a total of $5 billion in total assets. In projecting this growth, it is estimated that the regional banks will have total assets of approximately $9.2 billion at the start of fiscal 1969. On the basis of 0.141 man-day per million dollars of assets, 1,297 man-days will be required to examine and audit the regional banks. With available examiner man-days at 188, a field staff requirement of 6.9 is indicated. Rounding this field staff requirement to seven examiners, plus one examiner for duty in the Washington Office, equals our authorized strength of eight examiners. Therefore, we are not requesting an increase in the bank examining staff for fiscal 1969. However, we are requesting an additional clerk-stenographer (GS–4) who would be assigned the major responsibility of typing bank examination reports in order that the present clerical staff could devote their time to more professional duties.

Examination and audit procedures have been revised and modified over the last several years and are now considered at the minimum level necessary to maintain the overall strength and effectiveness of the bank examination program.

Budget summary

The estimate of 14 positions for fiscal 1969 reflects an increase of one position over the current fiscal year. The new position is a GS–4 clerk-stenographer.

On a man-year basis there are 13.6 man-years in 1969 and 12.6 in 1968, an increase in 1969 of one man-year. Of the increase 0.4 man-year represents delay in filling positions in the current fiscal year; the remaining 0.6 man-year represents the new position requested.

SELECTED WORKLOAD DATA

[Dollar amounts in millions]

	Fiscal year 1965	Fiscal year 1967	Percent increase or decrease [1]
Total permanent personnel, end of year	1,210	1,219	0.7
Expenses	$21	$26	24
Disbursement vouchers: Number	14,267	15,597	9
Dollar amount	$690	$885	28
Insured associations subject to examination and payment of insurance premiums	4,483	4,488	1
Premium billings, including premium prepayments	8,966	8,976	1
Examination fees billed	$12	$11	1 8
Investments, U.S. Government securities:			
Number of issues held	38	51	34
Dollar amount held	$1,313	$1,728	32
Acquisitions, dollar amount	$740	$953	29
Secondary reserve (premium prepayments) balance	$785	$1,083	38
Return credited to premium prepayment accounts	$20	$35	75
Mortgage loans and real estate properties acquired from insured institutions:			
Number	5,319	4,516	1 15
Dollar amount	$122	$129	6
Loans to insured institutions	$18	$83	361
Subrogated accounts in insured institutions in liquidation	$82	$118	44

[1] Decrease.

OFFICE OF PERSONNEL MANAGEMENT

Mr. EVINS. Personnel management. You want another job.
Mr. HORNE. Yes.
Mr. EVINS. We will put in 78.
(The page follows:)

OFFICE OF PERSONNEL MANAGEMENT

	1967 actual	1968 estimate	1969 estimate
Positions	13	13	14
Man-years	10.6	13.0	13.6
Net salary	$118,771	$136,360	$144,842

Functions and responsibilities

Personnel management is an integral part of general management. The office of personnel management, as a member of the management team, is delegated, under the chairman, responsibility for establishment, maintenance, and execution of a program of service, guidance, and action which will support equitably, the mission of the agency, the workforce, and the interest of the general public.

The office seeks to achieve this objective in carrying out the following functions:

1. Recruiting and staffing.
2. Employee development.
3. Employee performance and evaluation.
4. Position classification and pay administration.
5. Employee recognition and incentive.
6. Personnel records and reporting.
7. Program evaluation.
8. Formulating and issuing personnel policy.

Workload and personnel requirements

As a service organization, the volume of our work and the extent of our responsibility is very sensitive to increases in breadth and volume of activity in any one or all segments of the Federal Home Loan Bank Board. It is a known fact that as a result of the expanding role of the Board the volume of work throughout the agency has increased with a corresponding impact upon our area of responsibility.

OFFICE OF HOME LOAN BANK OPERATIONS

Mr. EVINS. Home Loan Bank Operations.

You go from 15 to 20. You want a five job increase there.

Mr. HORNE. Yes. I explained that in my testimony this morning. I tried to justify it there, and this also tries to justify it here in fuller detail than I did this morning.

Mr. EVINS. You have increased activity and increased workload as their assets increase.

We will put pages 82 through 89 in the record.

(The pages follow:)

OFFICE OF FEDERAL HOME LOAN BANK OPERATIONS

	1967 actual	1968 estimate	1969 estimate
Positions	14	15	20
Man-years	13.1	14.3	17.7
Net salary	$159,994	$180,070	$223,414

Functions and responsibilities

The Office of Federal Home Loan Bank Operations coordinates and supervises the operations of the 12 Federal home loan banks and the activities of the office of the fiscal agent in New York. In the past few years the complexity of operations of the banks has increased substantially as have their assets which at the present total $8.2 billion and are more than double those of 5 years ago. The tremendous growth of the savings and loan industry has been largely responsible for the increased scope in the operation of the banks. Because of the expansion of the banks and the addition of new services offered to the member institutions, they have been required to institute many procedural changes.

A major responsibility of the Office is the supervision of the extension of credit by the Federal home loan banks. During the past year revised standards of credit worthiness have been established and qualitative limitations have been developed with respect to loans for mortgage expansion purposes. Development of procedures and policies to assure that the proceeds of expansion loans will be properly reinvested in satisfactory market areas and in properties providing adequate security has generally been accomplished. It is necessary now and in the future to insure that there is conformity by the banks with all Board policies relating to credit; that evaluation procedures for the determination of credit worthiness are carried forth in a prescribed manner; and that changes in credit policies are formulated when needed to meet national or regional changes in economic conditions. By restraining or relaxing the availability of Federal home loan bank credit during periods when the economy experiences dislocating pressures, the Board discharges its responsibility for maintaining sound and economical home financing by members of the System. The time involved in policy formulation, operational review, and advisory endeavor has added immeasurably to the workload of the Office.

The changes in concepts and management innovations that have taken place in the past few years in the savings and loan industry make it necessary that this Office be always on the alert to the effect of these continuing changes on the operations of the Federal home loan banks. Because of the demands made by other urgent Board programs and the workloads referred to above it has not been possible to undertake important and greatly needed studies in depth with respect to future plans and programing. These are required to recognize and measure the potential and severe impacts that will likely occur as a result of the ever changing financial environment, and considering the increasing role the Federal home loan banks play in that environment, and the projected growth and increased demands to be made on the system. It is essential that the Office be prepared to cope in the relatively near future with substantially different activities and methods of operations that are presaged by the ever more frequent changes in monetary and fiscal policies that make it necessary to maintain a great degree of flexibility. It is a responsibility of this Office to keep the Federal Home Loan Bank Board fully informed as to the anticipated future operational demands on the Federal home loan banks and to provide the Board meaningful planning intelligence for its deliberations and in its relationship with other Government agencies and the savings and loan industry. This intelligence can be developed only through the proper staffing and efficient functioning of an organizational unit devoted to the planning of alternative future courses of action that will insure continuing proper supervision and successful management of the Federal home loan banks.

The ever-increasing volume of activity and the need by management to obtain more timely financial information upon which to base important management decisions have induced several banks to make drastic changes in accounting procedures and techniques. Other banks have not instituted such changes, and this office, in fulfilling its advisory and supervisory function, should initiate procedural studies which would also involve improved equipment utilization. A continuing comprehensive management survey has been long delayed for lack of personnel and should be started at the earliest possible time for the maximum effectiveness and value. The survey will provide the means of determining exactly what differences exist among the banks and provide a basis for prescribing changes in accounting systems and procedures where needed.

The major duties and responsibilities of the office include:

Supervisory.—1. Submission of recommendations to the Federal Home Loan Bank Board on general policies relating to the operation of the Federal home loan banks.

2. Supervision of compliance by the banks with the provisions of the Federal Home Loan Bank Act, the regulations for the Federal home loan bank system, and the policies of the Federal Home Loan Bank Board.

3. Analysis of all phases of the banks' operations and actions of the board of directors and executive committees, before making recommendations to the Federal Home Loan Bank Board with respect to actions requiring approval such as election of officers and appointment of counsel, officers' salaries, interest rates, budgets, dividends, leases, and bylaw amendments.

Financing and Investments.—1. The office either approves or disapproves requests of the Federal home loan banks for the purchase, sale, or exchange of securities in the open market. It also instructs the fiscal agent for the Federal home loan banks as to purchases, sales, and exchanges of securities to be made in behalf of the Federal home loan banks. During the fiscal year 1967, such purchases and sales aggregated $34.4 billion through approximately 5,100 transactions.

2. Recommends to the Board, at such times as the Director deems appropriate, new issues of consolidated Federal home loan bank obligations, the refunding in whole or in part of outstanding consolidated obligations, as well as the retirement in full of maturing obligations. The office is also responsible for all financial arrangements which are necessary for the sale, issuance, and retirement of, or payment of interest on, consolidated Federal home loan bank obligations. During the 12-month period ending June 30, 1967, there were seven issues of such consolidated obligations totaling $3,850 million, and maturities aggregated $5,574 million.

3. Maintains close liaison with top officials of the Treasury Department and obtains clearance from the Secretary of the Treasury with respect to the offering date, term, amount, and rate of consolidated obligations as required by section 303(a) of the Government Corporation Control Act.

4. Makes all necessary arrangements for acceptance and release by Federal Reserve banks of Government securities held in custody for the Federal home loan banks.

5. Has full responsibility for the transfer of funds from one area of the country to another through interbank borrowing and in connection therewith designates the bank or banks which are to lend to other Federal home loan banks.

Accounting, Procedures, and Reports.—1. The office develops and prescribes the accounting system for the Federal home loan banks and the form and type of weekly, monthly, and other periodic reports.

2. Maintains controls and tests the reporting accuracy of the banks on a continuing basis.

3. Prepares consolidated financial reports on the Federal home loan banks periodically.

4. Maintains complete records by banks and by issues of all securities owned, purchased and sold, or exchanged in order to exercise proper supervision over investment transactions of the banks and in order to make complete reports to the Treasury Department under the provisions of the Corporation Control Act.

Advisory.—1. As requested, or as initiated, advises the Federal Home Loan Bank Board with respect to the effect of, or need for, policies, regulations, or legislation with respect to all phases of the operations of the banks.

2. Provides daily advice, guidance, and counseling to the Federal home loan bank presidents and other bank officers on the many phases of the operations of the banks, interprets policy directives of the Board in the several functional areas of the banks, and engages in discussions of contemplated actions by the officers or boards of directors.

3. Maintains an operating handbook reflecting applicable statutes, regulations, and policies pertaining to matters affecting the banks and under the supervision of this office.

Workload and personnel requirements

The Immediate Office of the Director consists of six positions. The increase over the prior year results from an additional GS–14 position provided in the 1968 budget, and which will be utilized in the area of credit administration. The office presently includes nine other positions.

Four existing positions relate specifically to bank operations and have the responsibility for making analyses and recommendations on many phases of the operation of the 12 Federal home loan banks. Such matters include the ap-

proval or disapproval of budgets, dividends, leases, surety bonds, and various types of insurance, the analysis of reports from the banks and the preparation of consolidated financial statements. The banks are in varying stages of accounting modernization and procedural updating, and it is considered necessary to augment the existing staff by the employment of two Systems Accountants, GS–12 and GS–11. Under the guidance of Bank Operations Analysts, the additional staff members will study the detailed operations of each bank and develop standardized procedures to effect improvements in all areas of operations. The management survey will have as a corollary objective the bringing of operations of the banks closer together for a further system unifying effect.

Presently, the Bank Operations Analyst, GS–14, and a clerk make the highly technical arrangements necessary in the issuance of consolidated Federal home loan bank obligations. A large amount of background material must be developed and correcspondence prepared in connection with each offering of securities. A review is made of the minutes of all meetings—stockholders, boards of directors, and executive committees—of all the banks for conformity with applicable statutes, regulations, and policies. The annual examination report on each bank is reviewed and supervisory recommndations are made as deemed appropriate and the Board is advised of any significant aspects. In addition, bylaw amendments and interest rate changes are reviewed. The annual election of bank officers and their salaries are likewise reviewed and the actions are transmitted to the Board with appropriate recommendations as to approval, disapproval, or proposed modification.

Policy and procedural matters are studied and recommendations are made for changes looking toward improved Board and bank operations. There is an urgent need for the initiation of comprehensive studies leading to policy development and determination with respect to certain areas of the operations of the banks such as (1) surety bonds, including a current evaluation of the form of bonds and their applicability to the needs of the banks in relation to risk and cost; (2) a review of the corporate structures of the banks and a comprehensive analysis of the functioning of each board of directors, procedurally, and as to the substantive matters to which directors' deliberations should be directed; (3) projections and forecasts of activity in the various operating areas, including the quality and sufficiency of information flowing from members to the banks and the adequacy of its utilization; (4) the quality and timeliness of the reporting of data to the Board, and the need for additional data in other areas of bank activities; and (5) studies looking to improved communications between the banks and the Board to assure timeliness and appropriate utilization of intelligence. The employment of an additional person, a Financial Analyst, GS–13, is greatly needed to participate in the undertaking of these projects as well as to provide assistance in the other functional areas assigned.

The remaining three positions are immediately concerned with the purchase and sale of securities by the banks and the incumbents make analyses and recommendations on investment transactions concerning the portfolios of the 12 banks which, when considered together, constitute one of the largest concentrations of U.S. Government securities in existence.

While the additional positions requested above are urgently needed because of increased activities and workload, a definite and highly desirable additional benefit will be the development of a program for management succession. Retirement possibilities over the next few years and the need of a relatively small office for minimal backup in emergency situations calls for assurance of continuity in operations which would be provided from these additional positions.

The Office is in real need of two additional clerks in order to facilitate the handling of the increasing volume of work both internally with respect to the Board and externally to the banks. One of the celrks would serve as a TWX operator to expedite handling of the heavy volume of traffic to and from banks, and to do the filing in order to release other clerical personnel for more substantive duties. The second clerk would assist in overcoming undue delays in processing material to be submitted for Board consideration and action, to facilitate an evening in the flow of work by taking pressure off of peak workload periods, and to provide relief due to absences. The workload of the Office has increased materially and will continue to do so due to the expansion in the activities of the Board and the banks and the increase in the volume of activity.

Without the procedural and operating studies to which most of the additional personnel would be assigned, the operation of the 12 individual entities constituting the reserve credit reservoir for the thrift and home financing industry be-

comes more divided and lacking in uniformity and objectivity of purpose as part of a national system.

Recognition must be given to the areas in which data processing programs will permit operations of the Office to be accomplished more efficiently through computer applications. A considerable amount of exploratory study and evaluation will necessarily precede such applicatfons and should be commenced as early as possible. It is proposed to utilize the existing and requested personnel to review and evaluate all areas of operations to determine those which are susceptible to data processing. The principal operations to which these efforts will be directed are investment portfolio management and accounting; projecting, consolidating, and evaluating the need of the banks for funds including cash flow projections; and projection of income and expenses of the banks.

Because the functions of the Office are so wide in scope and deal with formulating and enforcement of policies connected with the operations of the banks, it is difficult to develop many meaningful workload measurements. Most functions are not the repetitive type of operations susceptible of definition which can be measured. The time spent relates in large measure to analysis and review of operations, formulation of policy recommendations, and providing counseling and guidance on the myriad of situations which develop in the operations of the 12 Federal home loan banks. It is anticipated, however, that the management survey will define those areas of the Office's operations where measurement techniques may be employed.

Budget summary

The estimate of 20 positions for fiscal year 1969 reflects an increase of five positions over the current fiscal year. The new positions are:

One, GS–13, financial analyst.
One, GS–12, systems accountant.
One, GS–11, systems accountant.
Two, GS–5, clerks.

On a man-year basis, there are 17.7 man-years in 1969 and 14.3 in 1968, an increase in 1969 of 3.4 man-years. Of the increase, 0.4 man-year represents delay in filling positions in the current fiscal year; the remaining 3 man-years represent the new positions requested.

OFFICE OF APPLICATIONS

Mr. EVINS. Office of Applications.

You want about four jobs, from 45 to 49. You have a Federal Charter Division, a State Charter Division, and a legal review staff in the Office of Applications.

Why can you not let the General Counsel do this work?

Mr. TREVAS. We had a reorganization several years ago, Mr. Chairman, and the point of that was that there was a lot of routine legal work that required immediate attention.

Mr. EVINS. This is a subcommittee of the General Counsel's Office.

Mr. TREVAS. And they have been doing some wonderful work. They work as a team right in Mr. Smith's office and, therefore, they can keep abreast with their demands instead of having to put it aside for other work that has equal or greater priority. It has worked out very well.

Mr. HORNE. Also still, I am sorry to say, we are many cases behind in the Office of Applications. We have caught up some since I was with you last, but there are still quite a few awaiting handling.

Mr. EVINS. How long does it take from the time an application is filed until a charter is granted, if the papers are in good order?

Mr. SMITH. From the time the charter is granted, they could open up for business within 30 days. It depends on the applicant complying with the conditions that were laid down. From the time they first

file an application, Mr. Chairman, for permission to organize, we are within 60 days' limit on that. That is the hardest process.

Mr. EVINS. That is one of the fastest applications of any agency of Government.

In some of these commissions, it takes a year to get a matter before the commission. We commend you for your speedy process.

In some cases they say the business will be bankrupt before it is acted upon. That does not apply to the Federal Home Loan Bank Board.

Mr. HORNE. No, sir; it does not, fortunately.

Mr. EVINS. You check to see if the statutory requirements are complied with and your legal section looks it over for you.

Mr. HORNE. Yes.

Mr. EVINS. Do you refer it to the General Counsel's Office?

Mr. TREVAS. Any substantial question goes to the General Counsel's Office, anything out of the routine category.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages 90 through 95.

(The pages follow:)

OFFICE OF APPLICATIONS

	1967 actual	1968 estimate	1969 estimate
Positions	45	45	49
Man-years	41.2	44.6	47.2
Net salary	$474,737	$531,156	$567,114

Functions and responsibilities

The functions of the Office of Applications involve the handling of all matters concerning applications by existing institutions, both Federal- and State-chartered, and by organizing groups for new Federal and State associations requiring action by the Federal Home Loan Bank Board under the rules and regulations for the Federal Savings and Loan System, the rules and regulations for insurance of accounts and the regulations for the Federal Home Loan Bank System.

It is the responsibility of the Office of Applications to initiate and develop eligibility standards with Board approval; uniformly apply eligibility requirements established in accordance with law, regulation or policy; and develop programs for serving the public interest through the insurance of accounts, chartering new Federal savings and loan associations, establishing branch offices and mobile facilities of existing Federal associations and granting bank membership to associations, savings banks, and insurance companies. In addition to applications relating to the estabilshment of insured savings and loan facilities, many other applications involving the operations of insured associations must be processed for Board action or action by the Office of Applications under delegated authority without reference to the Board. Such applications include matters relating to mergers, investment in service corporations, investment in office buildings, joint occupancy of office quarters, change of location, extension of lending area, sale of loans, purchase of assets, voluntary dissolutions, approval of security forms, amendment of charters and bylaws, designation of loss reserves, and releases and transfers of escrowed stock.

All of these functions are essential and consistent with the Agency's mission.

Organization

In addition to the Office of the Director, the Office of Applications is comprised of three organizational units, specializing in the following activities:

Federal-Charter Division.—Processes all applications relating to the establishment of additional Federal facilities and the operations of federally chartered associations.

State-Charter Division.—Processes all applications relating to the insurance of existing of new State institutions, the operations of State-chartered insured associations, and bank membership of State-chartered associations, savings banks, and insurance companies.

Legal review staff.—Provides day-to-day legal services for the variety of applications received by the Office, processes applications by State-chartered associations relating to security forms and accompanying revisions of bylaws and articles of incorporation, and develops statewide and nationwide security forms.

Workload and personnel requirements

The Office of Applications, since it was created in 1963 through the transfer of functions and personnel from other offices of the Board, has been hampered by the lack of overall administrative authority in any position other than the Director's. The normal administrative and policy functions have been of such increasing number and volume as to demonstrate the need for strengthening the Office of the Director. After careful study, it was determined to create, in April 1967, the positions of Deputy Director and Administrative Assistant to the Director and Deputy Director. The Deputy Director is authorized to act in all respects for the Director in his absence or in his inability to act for any reason. In addition, he has specific responsibilities for broad administrative matters and for development of policy recommendations and procedures. The administrative assistant is responsible for day-to-day matters of general administrative detail and preparation and coordination of a variety of reports relating to the operations of all units of the Office.

In the accompanying workload summaries, it is estimated that the volume of case studies will show a gradual increase during the fiscal years 1968 and 1969. As also shown in those summaries, it is estimated that the average time per case study can be kept relatively constant. This could be achieved through the addition of four new positions in fiscal year 1969, assigning one professional and one secretarial-clerical employee each to the Federal-Charter and State-Charter Divisions. A number of factors, in addition to the personnel needs in the Office of the Director described above, justify the requested increase.

With respect to the Federal-Charter Division, experience has shown that the present hearing procedure, which has been in effect for about two years, requires more work in the Office of Applications to process applications for permission to organize Federal associations and applications for branch offices. More detailed analyses must be made of the voluminous supporting information now submitted, and the staff is now responsible for functions formerly handled elsewhere. The procedure has resulted in more efficient processing, earlier decisions and equitable treatment for all interested parties; this has more than compensated for the additional effort required of personnel of the Office of Applications.

New responsibilities with respect to Federal facilities have been assigned to the Office of Applications during the fiscal year 1967. By regulation, the Board has authorized the establishment of mobile facilities by Federal associations in communities not warranting full-scale branch operation. The recently adopted procedure for processing such applications involves public notice, scheduling of hearings, and detailed analyses comparable to those required in the processing of applications for permission to organize Federal associations and branch offices. So far, only a few applications for mobile facilities have been received but considerably increased numbers of such applications are expected during this and next fiscal year.

By legislation enacted during the fiscal year 1967, the Congress has authorized participation by Federal associations in "service" corporations. Guidelines for approval of such corporations are currently being developed and it is expected that, once detailed information is published as to the basis for Board consideration and approval of Federal association participation in such organizations, a number of applications for participation will be forthcoming.

With respect to the State charter division, the Board has approved, effective July 7, 1967, an entirely revised procedure for processing applications for insurance of accounts from State-chartered savings and loan associations. At the same time, a new application for a commitment to insure accounts has been developed for State-chartered institutions in process of organization. The new procedure calls for public notice and hearings in connection with State applications in much the same manner as for Federal applications. Although resulting in increased efficiency, equitable treatment of all interested parties and a marked saving in

the time of the Board, the new procedure will require a larger volume of work by the staff of the office of applications. Involved, in addition to preparation of comprehensive analyses of supporting information, are the participation of analysts in the public hearing procedure and formal notification of decisions to all interested parties. Accompanying the adoption of the revised procedures for State applications for insurance was the publication of a completely revised outline of information to be submitted in support of applications for insurance or commitment, which includes a comprehensive description of the criteria followed in the evaluation of such applications and conditions established as a basis for approval.

Greatest in number among the State applications are those for approval of forms of securities, savings and bonus plans and related bylaw and charter amendments. With the increased competition for savings during the past several years, the number of such applications has constantly risen, and it has been necessary to assign additional personnel to this function. Whereas in 1964 two people were assigned full-time and two others part-time to the processing of applications of this type, now seven professional, clerical and secretarial employees devote virtually full time to this activity. No increase in personnel for this purpose is being requested for the 1969 fiscal year but the use of positions which were originally to be assigned to other duties adds to the need for approval of the additional positions requested for the office. The table on analysis of workload for State charter applications includes the case studies performed in connection with applications for approval of security forms and related bylaw and charter amendments; also, included in the number of employees appearing in the table are the personnel of the legal review staff whose time is devoted to this function. The huge volume of case studies on such applications, which on the average require less time than case studies on other types of applications, has had a significant effect on keeping the average number of days per case study on State applications at its present low level.

Additional developments have affected the functions of both the State charter and Federal charter divisions. In recent years there has been increased interest in mergers of both Federal- and State-chartered insured institutions. During the 1967 fiscal year, the Board and its staff devoted considerable attention to the development of a merger policy statement setting forth the criteria applied by the Board in considering such applications. Increased attention is being given to the possible antitrust and anticompetitive aspects of a proposed merger, the fairness of its terms, the performance of the participating institutions and the alternatives that have been considered short of merger. The application of these criteria requires comprehensive staff analysis of a large quantity of information supporting each merger application. Furthermore, in February 1967, decision was made to entertain applications for merger of permanent stock institutions into mutual associations; since consideration of such applications had been deferred since 1963, this action is expected to increase the number of merger applications. Another activity which has added to the work of the office of applications is a new procedure, instituted last year, for the collection of withdrawable account subscriptions, which has put Federal associations and State chartered applicants for insurance on a par. Analysis of the performance of applicants in the collection of the subscriptions requires additional work by personnel of the office. Implementation of the requirements of the freedom of information statute has also added to the workload of this office, particularly because of the large volume of applications involving decisionmaking and establishment of precedents which are processed by the office.

In addition to the processing of applications by State associations relating to security forms, described above, the legal section of the office of applications passes on the various legal aspects of applications submitted by both Federal-chartered and State-chartered facilities. The types of applications most generally involved are those relating to permission to organize new Federal associations, amendments to charters and bylaws of both Federal and State associations, branch offices, Federal Home Loan Bank membership of State-chartered existing or proposed associations, insurance of accounts, and modification or waiver of insurance conditions. In addition, the legal review staff passes on general legal matters submitted by the office of applications, legal opinions consistent with criteria established by the Office of the General Counsel, and selects for referral to the office of the General Counsel legal questions which must be determined by that office. It is expected that no additional personnel during the 1969 fiscal year will be needed for these functions.

Budget summary

The estimate of 49 positions for fiscal year 1969 reflects an increase of 4 positions over the current fiscal year. The new positions are:

Two, GS–12, financial analysts.
Two, GS–5, clerk-stenographers.

These positions would be allocated as follows:

Office of the Director	5
Federal Charter Facilities and Operations Division	19
State Charter Facilities and Operations Division	16
Legal Review staff	9
Total	49

On a man-year basis there are 47.2 man-years in 1969 and 44.6 in 1968, an increase in 1969 of 2.6 man-years. Of the increase, 0.2 man-year represents delay in filling positions in the current fiscal year; the remaining 2.4 man-years represent the new positions requested.

ANALYSIS OF WORKLOAD

Mr. EVINS. On page 96 you show the Federal charter facilities and operations applications.

You had 40 conversion charters received during 1968 and estimate 50 for 1969. You estimate 29 new charters will be processed during 1969.

Now, what do you mean by branches?

Mr. TREVAS. Applications for branches of existing associations.

Mr. EVINS. 185 want to establish branches. They go up from 116 to 185. The next page shows you the mergers. In 1967 there were 36, in 1968 there were 50, and you estimated 60 in 1969. Miscellaneous applications will total 340. What are they for?

Mr. TREVAS. Change of location, extension of time to comply with certain conditions imposed by the Board or amend a charter or bylaw provision.

Mr. EVINS. Generally speaking, what is the service area of an average Federal savings and loan association in a medium-size city?

Mr. SMITH. The average service area would depend on what the applicant claims.

Mr. HORNE. By law, which Congress passed I think a couple of years ago, you extended the lending area from 50 to 100 miles.

Mr. EVINS. That is what I am referring to, the lending area. That is 100 miles, generally, is it?

Mr. HORNE. That is right. There are a good many associations which were grandfathered in across State lines back in the 1930's.

Mr. EVINS. They were chartered beyond the State in some cases.

Mr. HORNE. Yes, sir. We have situations in which an association will almost encompass an entire State and run over into other States.

Mr. EVINS. How does the Board define its policy?

Mr. HORNE. We go, of course, by the law. A newly chartered association, one that was not grandfathered in, is limited in its lending territory to 100 miles of its principal office.

Mr. EVINS. New locations are generally 100 miles from the principal office; that is, the lending area is encompassed in that area?

Mr. HORNE. That is right. We have difficulty sometimes administering the grandfather clause. Now, if I may say this off the record——

Mr. EVINS. Off the record.

(Discussion off the record.)

STATE-CHARTER FACILITIES AND OPERATIONS APPLICATIONS

Mr. EVINS. Here are some more interesting figures on page 98, on the Office of Applications. Let us place this in the record.

(The page follows:)

STATE-CHARTER FACILITIES AND OPERATIONS APPLICATIONS
ANALYSIS OF WORKLOAD

	1967 actual	1968 estimate	1969 estimate
Applications for insurance:			
Carryover from prior year	15	10	10
Received during year	35	40	40
Less carryover end of year	10	10	10
Total applications processed during year	40	40	40
Case studies per application	3.18	3.75	3.75
Case studies in connection with applications for insurance	127	150	150
Other applications (case studies):			
Carryover from prior year	366	748	732
Received during year	2,947	2,646	2,855
Less carryover end of year	748	732	734
Total	2,565	2,662	2,853
Case studies in connection with "other applications":			
Membership	122	119	110
Mergers	65	85	95
Bylaws and forms of securities	1,811	2,000	2,150
Designation of reserves	51	42	45
Releases and transfers of stock within escrow	129	128	130
Miscellaneous and special studies	387	288	323
Total	2,565	2,662	2,853
Total case studies	2,692	2,812	3,003
Number of positions [1]	20	21	23
Average number of working days per employee per year	225	225	225
Total number of days available to complete all case studies	4,500	4,725	5,175
Average number of days per case study	1.67	1.68	1.72

[1] Includes 6 employees of the legal review staff for 1967 and 7 for 1968 and 1969 whose time is devoted to processing applications for approval of security forms and related bylaw and charter amendments of State-chartered institutions.

COMPTROLLER'S OFFICE

Mr. EVINS. Here is the Comptroller's Office on 104. Now, he wants 45 jobs, no increase. The Comptroller is right on top of the budget. Place in the record 104 through 107.

(The pages follow:)

COMPTROLLER'S DIVISION

	1967 actual	1968 estimate	1969 estimate
Positions	46	45	45
Man-years	37.4	43.4	43.8
Net salary	$310,888	$363,225	$374,668

Functions and responsibilities

The Division is responsible for the planning, development, and execution of the financial, budgetary, and fiscal policies of both the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation. It is also responsible for the conduct of the annual election of directors of the Federal home loan banks.

The major responsibilities of the Division include:

Development and maintenance of accounting systems and financial reports.—It is the responsibility of the Division to plan, direct, and currently maintain a system of accounting records and reports which will inform management of the

effect of all transactions on the operations and financial condition of the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation. In this connection the responsibilities of the Division include:

1. Accountability for all cash receipts and disbursements, assets, and liabilities, including the valuation thereof;

2. Purchase and sale or exchange of securities, including determination of yields thereon;

3. Issuance of checks in payment of claims for the Federal Savings and Loan Insurance Corporation;

4. Accountability for all income and expenses, by type;

5. Issuance of reports on the financial condition and the results of operations of the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation;

6. The billing and collection of insurance premiums (regular and prepayments), examination fees, and admission fees, including adjustments thereof, and authorizing the issuance of insurance certificates to all approved applicant institutions for insurance of accounts;

7. Determination of rate of return due on outstanding balance of the secondary reserve (premium prepayments) of the Federal Savings and Loan Insurance Corporation and the application thereof to individual accounts of the insured members as well as the notification of amounts credited and fund balances;

8. The planning and direction of accounting procedures for control of field operations, including payment of insurance, purchase of assets, receiverships, and contributions to insured institutions to prevent default;

9. The development of accounting practices and procedures with respect to: maintenance of individual records of mortgage loans owned by the Federal Savings and Loan Insurance Corporation; review and certification of loan service collection reports (contract servicers) as to principal, interest, taxes, insurance, servicing fees, and outstanding balances, and control of collateral obtained as security for loans made to insured institutions.

Analysis of financial needs and the furnishing of financial advice.—In addition to taking all possible steps to protect its insurance risk, it is essential that the Federal Savings and Loan Insurance Corporation maintain a liquidity policy which will provide sufficient funds for insurance purposes whenever and wherever needed with a minimum of delay. In accordance with this policy the Division is responsible for:

1. A continuing analysis of the security market and the future financial needs of the Federal Savings and Loan Insurance Corporation in order that the portfolio of investments may be properly balanced;

2. Recommending investment of surplus funds in Government securities at the best yields available commensurate with a distribution of maturities which will provide adequately for the needs of the Federal Savings and Loan Insurance Corporation.

3. The arrangement for and methods of repayments of loans authorized by section 402(i) of the National Housing Act, as amended;

4. Development of procedures for the establishment of depositories and transfers of funds for insurance purposes.

Other features of financial responsibility of the Division include:

1. Custody of all assets of the Federal Savings and Loan Insurance Corporation;

2. The liquidation of all liabilities;

3. Valuation of assets and the establishment of reserves;

4. Billings, adjustment, and collection of insurance premiums (regular and prepayments);

5. Collection of interest on investments of the Federal Savings and Loan Insurance Corporations;

6. Processing and payment of all legitimate claims against the Federal Savings and Loan Insurance Corporation.

Planning, coordinating, controlling, preparing of annual budgets.—The major functions and duties of the Division in this area of work include: planning and coordinating of all budget matters for the Board and the Insurance Corporation; establishment of procedures for the development and justification of estimates; collaboration with and advice to the staffs of the Board and the Federal Savings and Loan Insurance Corporation in the preparation and justification of the budget estimates; review and analysis of regular and special estimates and

recommendations thereon to the Chairman of the Board; participation in the hearings held in connection with the presentation of estimates to the Chairman of the Board, the Bureau of the Budget, and the Appropriations Committees of Congress.

Calls, attends, and participates in meetings held in connection with budget activities; maintains liaison with the Bureau of the Budget and the Appropriations Committees of Congress, and is responsible for clearance of all proposed legislation relating to budget.

Collaborates with Bureau of the Budget examiners in developing improved budget practices and methods of presenting and justifying estimates; reviews monthly budget reports of operations of the Board and the Insurance Corporation in comparison with internal budgetary allowances, and performs other activities related to the duties of a budget office.

The Division is also responsible for handling all matters relating to the former Home Owners' Loan Corporation.

In addition to the above, the Division is also responsible for the preparation of the annual budget for the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation, including the narrative statement of program and performance, business-type financial statements and detailed supporting schedules and justifications, as required by Bureau of the Budget circular A–11.

Upon approval of each annual authorization by the Congress, the Division is responsible for the preparation of quarterly apportionments for submission to the Bureau of the Budget and for maintaining operations within established limitations.

The Division is further responsible for the issuance of monthly and quarterly reports on the status of the budget, apportionments and allotments for both the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation.

DATA MANAGEMENT DIVISION

Mr. EVINS. Next is the Data Management Division, which goes up from 53 to 54 positions. Place in the record 112, 113, and 114.

(The pages follow:)

DATA MANAGEMENT DIVISION

	1967 actual	1968 estimate	1969 estimate
Positions	51	53	54
Man-years	45.6	50	51.9
Net salary	$372,496	$420,829	$464,624

Functions and responsibilities

The Division provides a wide variety of data analysis services to the Board and its staff, the savings and loan industry, the financial community, and Federal agencies whose programs are related to the home loan financial market. These services run the gamut from the collection of simple reports to the development of sophisticated statistical analyses.

In addition to compiling financial information on member institutions, the Division conducts a continuing study of mortgage financing, home mortgage holdings and foreclosures activities throughout the United States. It also collects data for and processes a basic study of interest rates and terms on conventional loans for all major home-mortgage lending institutions.

Beginning in fiscal year 1964, the Division's responsibilities were expanded to provide ADP services to other offices of the Board; in fiscal 1968 these services are being further expanded and in fiscal 1969 an even greater number of offices will be provided with ADP services.

In March of 1967 the name of the Division was changed to Data Management Division. Simultaneously, the functions and responsibilities of the Division were focused more sharply on the concept of computer-oriented support to all of the Board's programs. To assist in the orderly implementation of this function the Division was placed under the complete supervision, that this, including administration and program, of the Executive Assistive Assistant to the Chairman. Concurrently, an ADP advisory committee, consisting of top staff officers

whose programs are more obviously in need of computer support, was established and impowered to give policy guidance to the Division. Additionally, the Division was charged with the immediate responsibility of transferring the payroll and related personnel systems to the new computer.

Workload and personnel requirements

The organizational change outlined above along with the transfer of all existing statistical surveys to the Board's computer has given new impetus to the Division's plans to expand its support and thereby use the computer more effectively throughout the Agency. Several new applications have been proposed so that the Division has a long list of projects to analyze in terms of unused computer capacity.

In addition to the study now underway to develop an integrated payroll and personnel information system the Division has the following plans for fiscal 1969:

Program activities

1. *Office of Applications.*—The Division plans to devise data systems which will assist the Office in quantifying its recommendations concerning applications for new members and branches. This will involve designing data systems to develop guidelines and numerical weights about the financial market of the community and institutions concerned. The office already possesses manually a quantitative questionnaire which can be handled by the computer for a start, but it often needs to go deeper, particularly since associations have hired market research firms with sophisticated computer and data capabilities to justify their claims. The computer can provide ways and means for the Board to make objective judgments in these cases.

2. *Office of Examinations and Supervision.*—The bulk of the Board's staff is working on the problem of examination and supervision. Decisions made at the examining level can vitally affect the future course of an association. Quantitative guidelines need to be developed through data systems which will help examiners make sound analyses concerning the condition of an association. The Division will plan a flexible system designed to assist examiners, by providing them with numerical analyses and sampling criteria to use in their work. Former guidelines will be tested against experience. Comparisons with the history of associations with the same experience will be made. Additionally, the sheer administrative and management reporting burden of a far-flung field staff can be eased by the computer. The evaluating and scheduling of workloads are other areas which can be systematized.

3. *Office of Federal Savings and Loan Insurance Corporation.*—The Division has been asked to explore the insurance claim payoff system when associations fail. This will entail the design of a flexible, responsive system capable of accepting a variety of formats of account information and assembling claim and payoffs rapidly and accurately.

In addition, the premium billing system needs redesigning in the light of a computer facility to improve efficiency and quality as well as deliver comprehensive reports as byproducts. The staff will also assist the Office in its task of managing hundreds of real estate properties acquired by default.

4. *Office of Federal Home Loan Bank Operations.*—The operations of the bank system need to be quantified systematically and automated to provide rapid and accurate information and analyses for advance policy, profile margins, rates and obligations. As several banks are contemplating automation, coordination to insure mximum equipment integration will be required. Division staff must be available for consultation, planning, and where desirable, execution.

In this connection, a contracted management survey of the data processing requirements of the district banks is being conducted during fiscal 1968. Although the results of this survey are not complete, preliminary results indicate that at least six of the district banks are automating and the monumental burden of coordinating and supporting these endeavors falls upon the Director of the Division.

ORGANIZATION AND METHODS DIVISION

Mr. EVINS. The Organization and Methods Division. Why can't you consolidate this with data management?

Mr. TREVAS. That is a small office of three people. They do a different kind of job. That is, internal organization of the Board.

Mr. EVINS. You have a separate office for this. It should be in the other.

Mr. TREVAS. One has to do purely with statistical data.

AVERAGE NUMBER OF WORKING DAYS

Mr. JONAS. I hate to go back, but please look at page 97. I see a figure there that interests me. You say average number of working days per employee, per year, 225. That would be only 45 weeks, according to my figures. What do you do with them the rest of the 7 weeks?

Mr. TREVAS. To reach this figure you exclude Saturdays, Sundays, and holidays and leave. This is working days. Some employees have 26 days of leave and others have 13 days.

Mr. JONAS. That makes up the 52 weeks?

Mr. TREVAS. That is right.

OFFICE OF EXAMINATIONS AND SUPERVISION

Mr. EVINS. Let us get over to the Office of Examinations and Supervision. This Office conducts regular, periodic and special supervisory examinations of all Federal savings and loan associations, of insured State-chartered savings and loan associations, other institutions of the savings and loan type insured by the Federal Savings and Loan Insurance Corporation, and of noninsured member institutions. Tell us what a noninsured member institution is.

Mr. WALTERS. Any noninsured member institution in any State of the Union that is not properly supervised and examined in the State, we will make examinations at the request of the Federal home loan bank there. Now, those vary from time to time and from place to place. There are about 400 noninsured member institutions.

Mr. EVINS. You just told us about one that went broke. Did you investigate that?

Mr. GREENEBAUM. He was not a member.

Mr. HORNE. It was not a member of our bank.

INSPECTION OF NONINSURED MEMBERS

Mr. EVINS. You do, however, inspect noninsured members.

Mr. TREVAS. It would be a State-chartered savings and loan association which is a member of the Federal home loan bank in that district but is not insured.

Mr. EVINS. You inspect them?

Mr. TREVAS. Yes.

Mr. EVINS. Why do you inspect them if they are not insured?

Mr. TREVAS. Because they are going to make loans to them, and if they do not have adequate State supervision, the Federal home loan bank in that area will ask our Office of Examinations and Supervision to check them, because they are not going to make loans to them unless they know how solid the institution is.

Mr. EVINS. If the State does not supervise them and they are not insured or chartered by you, why do you go out into the field?

Mr. HORNE. They are allowed under the law to become members.

Mr. EVINS. Can't you draw up a regulation saying "If you are

going to be a member we want to know that you are sound and take the insurance?"

Mr. TREVAS. Any new member would have to be; yes. These are the ones that got in before these regulations.

Mr. EVINS. Noninsured members, how many are there?

Mr. CALLAHAN. 447.

Mr. EVINS. How often do you inspect these noninsured members?

Mr. WALTERS. Only upon request.

Mr. EVINS. Request by whom?

Mr. WALTERS. By the Bank System.

Mr. TREVAS. The bank itself which makes the loans to them in that area. We have 12 regional banks. Any one of those regional banks would ask the examinations people to take a look at them.

Mr. EVINS. How often do you make your so-called regular examinations?

Mr. HORNE. Every year, sir.

Mr. EVINS. Every institution gets a check once a year.

Mr. HORNE. That is our goal and we have just about achieved it.

Mr. WALTERS. That is right.

Mr. HORNE. Let me say this off the record.

(Discussion off the record.)

Mr. JONAS. Can one examiner do a better job by himself, or is it a better job if he has somebody with him?

Mr. WALTERS. I think in almost every case he would have one assistant even on the smaller jobs. We have cut down our crews, as I said earlier today, to the very minimum to get more efficiency. But in most cases, they would run from five men up to probably 10.

STATUS OF EXAMINATIONS

Mr. EVINS. You show on page 142 the status of examinations. Examinations of insured institutions were maintained on a current basis in fiscal 1967.

The average period between examination of Federals was approximately 11.7 months. It took about a year.

Mr. HORNE. Yes.

Mr. EVINS. The average period between examinations of State institutions was approximately 12 months.

Mr. HORNE. Yes.

Mr. EVINS. Examinations were not made of 12 Federal associations in 1967. This group included six associations that had not been examined within 13 months as of June 30, 1967. The other six were not examined because they had only reached the 12-month period between examinations at the close of the year. Offsetting these 12 examinations were 129 examinations which were made ahead of schedule. There were 79 insured State-chartered institutions that were not examined in fiscal 1967.

ROTATION OF EXAMINERS

Mr. JONAS. Do you rotate your examiners?

Mr. WALTERS. Generally, we keep examiners within a certain district. We rotate them as far as the examination of individual associations is concerned.

Mr. JONAS. You would not send the same team back next year that had made the examination this year, you would send in another team?

Mr. WALTERS. In some cases they will go back the second year, but generally we rotate them within a 3-year period at least. Frequently, we bring examiners in from other districts on a temporary basis to perform in those districts. That is part of our basic program. But we do use the rotation theory in order to get a different look at those institutions.

Mr. JONAS. Do you move your examiners from one district to another at any given interval?

Mr. WALTERS. No. We have no program for that. I would say the great majority of our examiners remain within the district to which they were assigned, but there may be several States in the district, and they may be rotated within different States, within the same region.

Mr. HORNE. One disadvantage, I suppose, of moving them from district to district on a permanent basis would be as regards their homes and families.

Mr. JONAS. Yes, I understand.

Mr. HORNE. But I understand what you are driving at, and it is something that is very important, that is, to have enough rotation to make sure that there isn't too close an affinity.

Mr. JONAS. That is right.

Mr. HORNE. We think we do that.

SUPERVISION OF INSTITUTIONS INSURED BY FSLIC

Mr. EVINS. The office of examinations and supervision is also responsible for the supervision of institutions insured by the Federal Savings and Loan Insurance Corporation, the purpose of which is to prevent the development or continuance of unsafe and unsound financial practices. You say the authority for examination was expanded by the Financial Institutions Supervisory Act of 1966, which you testified to earlier. It relates to affiliates.

Mr. HORNE. Yes, sir.

Mr. EVINS. You show the number of examinations annually and monthly and the time spent at each institution, which is about a week. How many problem cases do you develop as a result of these examinations? I suppose most of them are corrected promptly.

Mr. HORNE. In most cases we are meeting with better results than we were prior to this legislation.

Mr. JONAS. How long does an institution allow a loan to stay in default before it forecloses?

Mr. WALTERS. That depends a little bit on the policy of the institution, the conditions in the area, the cause of the default, that type of thing. Some are very prompt, the moment it comes delinquent they will file foreclosure actions. Others are a little more lenient, as I say, depending upon conditions.

Mr. JONAS. They have some judgment they can exercise in the situation?

Mr. WALTERS. Yes. Once they become delinquent, according to our formula, they will be treated as scheduled items in the substandard assets schedule.

Mr. JONAS. You would list them on your report as questionable assets?

Mr. WALTERS. That is right. But they have judgment as to what they want to do with those assets.

Mr. JONAS. After how long a default?

Mr. WALTERS. Ninety days.

Mr. RAND. Mr. Chairman, another factor that intervenes here is the State law pertaining to foreclosures. Some of the States have very liberal laws from the lender's standpoint. This might trigger foreclosure a little more rapidly than in another State where there is a long period of redemption or other technical, legal barriers put in the way.

WORKLOAD

Mr. EVINS. Here is the description of a caseload on page 138. This is the workload in the home office. Examination of insured associations, you estimate to be 4,610. Examination of affiliates of insured associations, you estimate to be 500. The average assets of insured institutions was $32.1 million, or is estimated to be that. The average volume of new loans made by insured institutions during the year is estimated to be $4.1 million; is that right?

Mr. HORNE. Yes, sir. Of course, as you say, sir, that 31.2 is an average. There is one association that has about $2 billion. Then there are two or three others that reach to about a billion dollars. Then there are quite a few that range between $100 million and $1 billion. Of course, there are some that range less than $1 million, a few, and quite a handful that range on up to $2 million, $5 million, up to $20 million. So the average comes out to $31.2 million.

Mr. EVINS. Here is the workload of the field on page 140. From 1964 to 1968 the combined assets of insured institutions go from $108.9 billion to $149.6 billion. Now, in the next column the increase over last year, the percentage goes down, does it not?

Mr. TREVAS. Yes.

Mr. EVINS. 1964 to 1969 the percentage increase of assets is down.

Mr. TREVAS. That is right.

Mr. EVINS. This is institutions examined, I suppose.

Mr. HORNE. Yes, sir.

Mr. EVINS. Consideration under the new statutes is given to all necessary expenses of the office in connection with the making of examinations. These are considered under the law nonadministrative.

Mr. HORNE. Yes, sir.

Mr. EVINS. Place in the record 138 through 142.

(The pages follow:)

Workload and personnel requirements—Home office

The staff required for the adequate and timely discharge of this responsibility is determined by the number, size, and business volume of insured institutions

and by economic conditions affecting their operations. Information relating to the workload of the office is set forth below:

[Dollar amounts in millions]

Description	1967 actual	1968 estimate	1969 estimate
Examinations of insured associations completed or to be completed	4,639	4,578	4,610
Examinations of affiliates of insured associations to be made		500	500
Average assets of insured institutions (start of year)	$28.3	$29.7	$31.2
Average volume new loans made by insured institutions during year	$3.2	$3.5	$4.1

For fiscal 1969, the staff of the Office will include the Director and a staff of 74.

Despite the estimated increase in the 1969 workload, as indicated in the table on the preceding page, the Office plans to absorb the additional workload with the same number of positions provided for fiscal year 1968.

On a man-year basis, there are 73 man-years in 1969 and 69 in 1968, an increase in 1969 of 4 man-years. The increase represents delay in filling positions in the current fiscal year.

The increase of 4 man-years in the Washington Office staff is to meet the responsibilities imposed by the Financial Institutions Supervisory Act of 1966 in furtherance of preventive supervision. Two man-years are required for additional analytical work to initiate cease-and-desist actions; the remaining 2 man-years are required for guidance of field staff and analysis of reports relating to affiliates of insured institutions.

Functions and responsibilities—Field offices

The Office, in carrying out its examining responsibility, conducts regular periodic and special supervisory examinations of all Federal savings and loan associations and those State-chartered savings and loan associations, homestead associations, and cooperative banks, the savings or share accounts of which are insured by the Federal Savings and Loan Insurance Corporation. Authority was expanded by the Financial Institutions Supervisory Act of 1966 to include examination of affiliates of insured associations.

Noninsured member institutions of the Federal Home Loan Bank System are examined by the Office if they are not subject to State examination and supervision or have not been examined by the State authorities.

The Office also examines applicant savings and home-financing institutions to determine their eligibility for membership in the bank system, insurance of savings or share accounts, or conversion from State to Federal charter.

Public Law 895, approved July 3, 1948 (62 Stat. 1239), considers all necessary expenses of the Office, in connection with the making of examinations, nonadministrative.

Growth of institutions subject to examination

The combined assets of insured institutions reached the approximate total of $133.1 billion on June 30, 1967. The continued asset growth in the fiscal years since 1964 is shown below:

[Dollar amounts in billions]

Fiscal year	Assets	Increase last year		Increase last 3 years		Increase last 5 years	
		Amount	Percent	Amount	Percent	Amount	Percent
1969 [1]	$149.6	$8.6	6.1	$21.8	17.1	$40.7	37.4
1968 [1]	141.2	8.1	6.1	21.5	18.0	45.0	46.8
1967	133.1	5.3	4.1	24.2	22.2	49.7	59.6
1966	127.8	8.1	6.8	31.6	32.8	55.3	76.3
1965	119.7	10.8	9.9	36.3	43.5	56.5	89.4
1964	108.9	12.7	13.2	36.4	50.2	53.1	95.2

[1] Estimated.

The average size of insured institutions as of June 30, 1967, was $29.7 million, an increase of $1.4 million (4.9 percent) during fiscal 1967, and an increase of $10.1 million (51.5 percent) during the past 5 years. It is estimated that the

average size will increase $1.5 million in fiscal 1968 and $1.6 million in fiscal 1969, reaching $32.8 million at June 30, 1969, an increase of 10.4 percent in this 2-year period.

Many of these institutions have grown to great size. The three largest associations at June 30, 1967, had assets in excess of a billion dollars. The largest association had assets of approximately $2.5 billion; the other two had assets of $1.5 billion and $1.4 billion, respectively. As shown by the following table, associations with assets of $100 million or over have increased in number from 211 at December 31, 1964, to 225 in 1965 and 231 in 1966, an increase of 9.5 percent in 2 years.

	Number of associations		
	1966	1965	1964
Assets at Dec. 31:			
Over $300,000,000	37	35	31
$200,000,000 to $300,000,000	46	41	33
$150,000,000 to $200,000,000	47	47	44
$100,000,000 to $150,000,000	101	102	103
$75,000,000 to $100,000,000	100	90	79
$50,000,000 to $75,000,000	243	237	204
$25,000,000 to $50,000,000	658	632	590
Total	1,232	1,184	1,084

New loans

The dollar volume of new loans made in fiscal 1967 amounted to $14.4 billion, a decrease of 34.5 percent below the $22 billion in fiscal 1966. The average volume per association exceeded $3.2 million. Mortgage loans made by insured institutions in fiscal years 1964 through 1967 totaled $84.8 billion; this compares with total mortgage holdings of these institutions of $81.2 billion at June 30, 1963. It is estimated that annual new dollar loan volume of insured institutions will increase to $16.2 billion in fiscal 1968 and to $18.8 billion in fiscal 1969. It is expected that these institutions will continue to make approximately 43 percent of new loans made by all lenders on one- to four-family dwellings while continuing to lend in volume on multifamily dwelling units.

The following table shows the volume and activity of the industry. (The data on loan volume is shown because this is a significant workload factor.)

Insured institutions	1966 actual	1967 actual	1968 estimate	1969 estimate
Number [1]	4,483	4,514	[2] 4,488	4,520
Assets [1] ..billions..	$119.7	$127.8	[2] $133.1	$141.2
Average size [1] ..millions..	26.7	28.3	29.7	31.2
New loans made ..billions..	22.0	14.4	16.2	18.8
Loans to finance construction (included in above) ..do....	5.1	3.1	3.5	4.5
Average volume of new loans ..millions..	4.9	3.2	3.5	4.1
Savings capital [1] ..billions..	102.0	108.1	[2] 115.7	123.6

[1] Beginning of year.
[2] Actual.

Status of examinations

Examinations of insured institutions were maintained on a current basis in fiscal 1967 (see workload table on p. 147). The average period between examinations of Federals was approximately 11.7 months. The average period between examinations of State institutions was approximately 12 months.

Examinations were not made of 12 Federal associations in fiscal 1967. This group included six associations that had not been examined within 13 months as of June 30, 1967; the other six associations in this group were not examined because they had only reached the 12-month period between examinations at the close of the year. Offsetting these 12 examinations were 129 examinations made ahead of schedule.

There were 79 insured State-chartered institutions that were not examined in fiscal 1967. This group comprised 37 institutions that had not been examined within 13 months as of June 30, 1967, and 42 institutions that had only reached

the 12-month period between examinations at the close of the year. However, there were 58 examinations made ahead of schedule.

COMPARATIVE SUMMARY OF NONADMINISTRATIVE EXPENSES

Mr. EVINS. Comparative summary of nonadministrative expenses on page 149. It shows that Greensboro, N.C. and Los Angeles, Calif. cost more to make investigations than in the other areas. The Boston area is the least costly. Is that because they have more institutions in California and North Carolina?

Mr. WALTERS. Larger institutions, primarily. Nine of the 10 largest in the United States are in California.

Mr. JONAS. The Greensboro bank is the biggest bank, is it not?

Mr. HORNE. Not assetwise, and territorially speaking it is second. In number of associations, you are right, sir.

FEDERAL SAVINGS & LOAN INSURANCE CORPORATION

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
Administrative expenses: Insurable interest and insurance settlement operations (expenses—costs)	245	306	340
Financing:			
Unobligated balance lapsing	40		
Limitation	285	298	340
Increase in limitation for civilian pay icnreases		8	

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	Personnel compensation:			
11.1	Permanent positions	161	212	244
11.3	Positions other than permanent		1	1
11.5	Other personnel compensation	1	1	1
11.8	Special personal service payments	8	4	4
	Total personnel compensation	170	218	250
12.0	Personnel benefits	12	17	19
21.0	Travel and transportation of persons	2	5	5
22.0	Transportation of things		1	1
23.0	Rent, communications, and utilities	29	29	29
24.0	Printing and reproduction	12	14	14
25.1	Other services	5	5	5
25.2	Services of other agencies	14	15	15
26.0	Supplies and materials	1	2	2
93.0	Administrative expenses included in the fund as a whole	−245	−306	−340
	Total accrued administrative expenses—costs			

PERSONNEL SUMMARY

Total number of permanent positions	19	20	20
Average number of all employees	14	18	20
Average GS grade	10.0	10.2	10.2
Average GS salary	$11,570	$12,261	$12,619

Mr. EVINS. You delineate the services provided by the Board for the Federal Savings and Loan Insurance Corporation. They provide most of them for the Corporation, including insurance underwriting, examination and supervision of insurance institutions, development of rules and regulations for the Insurance Corporation, legal services, personnel functions, auditing, accounting, budgeting, public informa-

tion, and office management analysis. You do everything for the Insurance Corporation.

Mr. HORNE. Yes, sir.

Mr. EVINS. Then you state down here that the Office of Federal Savings and Loan Insurance Corporation implements the payment of insurance and the development of plans for settlement of insurance, takes steps to prevent default or restore institutions to normal operations, and manages assets acquired by the Corporation.

Mr. HORNE. Yes, sir.

STATEMENT OF SOURCES AND APPLICATION OF FUNDS OF THE INSURANCE CORPORATION

Mr. EVINS. This table on page 164 shows a statement of sources and application of funds of the Insurance Corporation.

In 1967 assets purchased from insured institutions were $1,400,000, then it jumped up to $12 million in 1968, and in 1969 you do not anticipate you are going to purchase any assets. You think you are going to have a good year?

Mr. WORTHY. We simply don't know.

Mr. HORNE. We just are not sure there. As I said in my testimony, Mr. Chairman, I don't want to mislead the committee at all. We still do have some very serious problem associations.

Mr. EVINS. In other words, in 1968 you had to pay off $12 million. You estimate this on the basis of past experience, and you do not anticipate any acquisition of assets.

Mr. HORNE. Estimated on the basis of past experience, and as we look at the problem cases we have. As I pointed out, we have 29 very serious problem cases. These problem cases, sometimes they work themselves out, sometimes it takes a year or 2 or 3 years down the road after they become a problem case before we know what the final results are going to be. There is no way to do more than estimate.

Mr. EVINS. The amount of funds applied to financing in 1967 was $211,500,000. In 1969 you estimate $397 million. This is in the purchase of United States securities by the Insurance Corporation.

Mr. HORNE. Yes.

Mr. EVINS. They want to buy these securities with their funds to make them more liquid.

Mr. HORNE. That is right.

INCREASE IN TREASURY CASH

Mr. EVINS. What about the next figure, the increase in cash with Treasury? It goes from $765,300 to $2,170,000.

Mr. CALLAHAN. This again is much like it was in the case of the Board, it is simply an estimate of the cash we expect to have on hand.

Mr. EVINS. To put into the Treasury?

Mr. CALLAHAN. Yes.

EXPLANATION OF INCREASE IN EXPENSES

Mr. JONAS. Mr. Chairman, I don't think we have a clear enough understanding in the record of why these expenses are jumping up $10 million a year.

Mr. WORTHY. Where is that?

Mr. JONAS. Under "Funds applied, expenses," $47.8 million in 1967 to $59.3 million in 1968, and $68.6 million in 1969.

Mr. CALLAHAN. If you look on the next page you will see the detail.

Mr. EVINS. Tell us why it goes up about $10 million a year.

Mr. CALLAHAN. On page 165 you will see a more detailed explanation.

Mr. WORTHY. We pay a return on our secondary reserves to the institutions which have deposited premium prepayments with us.

Mr. JONAS. That is called an expense; you list that as an expense?

Mr. WORTHY. Yes; though we retain the funds ourselves. That is shown on the next page. For example, in 1967 it is shown as $39 million, whereas in fiscal 1968 it will be $48 million, and then on up each year as our fund builds up. It really indicates a higher percentage return as well as a larger fund.

For example, our secondary reserve right now is something on the order of $1.1 billion. At the end of 1967, calendar 1967, we paid a return to the institutions who had deposited this with us of about 4.23 per centum for the average amount they had in during the year. That is how we arrive at the $39 million. As they deposit more with us, why, of course, that will go up.

Mr. HORNE. As they grow in size they deposit more.

Mr. WORTHY. If you look on the next page at the insurance reserves, the secondary reserve down at the bottom, in 1966 it is shown as $959 million and then it climbs on up each year. Right now it is, as of the end of 1967, about $1,127,000,000.

Mr. WYMAN. It is an interest charge.

Mr. WORTHY. That is right. The $39 million was counted as part of the earnings of the associations.

Mr. JONAS. Do you return any unearned premiums or any surplus of premiums back to the member institutions?

Mr. WORTHY. No, sir; we do not.

Mr. JONAS. You retain that?

Mr. WORTHY. The only return that we make is the one that I mentioned on the secondary reserve and we actually retain those dollars but credit them to the account of the association which earned them. We don't make a premium credit as does the FDIC.

APPLICATION OF FUNDS AND INCOME STATEMENTS

Mr. EVINS. We will place pages 164 and 165 into the record.

(The pages follow:)

A. STATEMENT OF SOURCES AND APPLICATION OF FUNDS

	1967 actual	1968 estimate	1969 estimate
FUNDS APPLIED			
To operations:			
Acquisition of assets:			
Assets purchased from insured institutions	$1,441,982	$12,000,000	
Furniture, fixtures, and equipment	11,356	5,000	$5,000
Subrogated accounts purchased in insured institutions	34,118,482		
Loans to insured institutions	65,000,000		
Contributions and provisions for contributions to insured institutions	12,457,475	5,000,000	
Expenses	47,896,490	59,354,567	68,620,028
Loss on assets acquired from insured institutions	10,634,758		
Increase in selected working capital			2,644,882
Total applied to operations	171,560,543	76,359,567	71,269,910
To financing:			
Increase in investments in U.S. securities held (par)	211,567,000	396,000,000	397,000,000
Increase in cash with Treasury		765,330	2,170,186
Total applied to financing	211,567,000	396,765,330	399,170,186
Total funds applied	383,127,543	473,124,897	470,440,096
FUNDS PROVIDED			
By operations:			
Realization of proceeds from assets acquired from insured institutions	19,755,545	20,000,000	20,000,000
Additional premiums credited to secondary reserve	84,618,842	183,000,000	189,000,000
Return on additional premiums—prepayments	39,200,863	48,633,212	56,756,843
Gain on assets acquired from insured institutions	114,598		
Income	164,986,416	220,145,779	204,683,253
Decrease in selected working capital	20,201,419	1,345,906	
Total provided by operations	328,877,683	473,124,897	470,440,096
By financing: Decrease in cash with Treasury	54,249,860		
Total funds provided	383,127,543	473,124,897	470,440,096
Funds applied to operations	171,560,543	76,359,567	71,269,910
Funds provided by operations	328,877,683	473,124,897	470,440,096
Net budget expenditures	−157,317,140	−396,765,330	−399,170,186
The above are credited to net receipts of the fund	−157,317,140	−396,765,330	−399,170,186

B. STATEMENT OF INCOME AND EXPENSE

Income:			
Insurance premiums and admission fees earned	$94,755,240	$139,180,492	$106,067,496
Interest earned on U.S. securities	63,771,243	74,040,287	91,690,757
Interest earned on loans	1,268,843	1,925,000	1,925,000
Income on assets acquired from insured institutions	5,148,142	5,000,000	5,000,000
Gain on assets acquired from insured institutions	114,598		
Gain on sale or exchange of securities	41,351		
Miscellaneous	1,597		
Total income	165,101,014	220,145,779	204,683,253
Expense:			
Administrative expense	245,059	306,000	340,000
Payments to Federal Home Loan Bank Board for services and facilities	4,013,304	5,380,355	6,382,185
Liquidation and other expenses	4,398,533	5,035,000	5,141,000
Contributions and provisions for contributions to insured institutions	12,496,206	5,000,000	
Subtotal	21,153,102	15,721,355	11,863,185
Accrued return on additional premiums—prepayments	39,200,863	48,633,212	56,756,843
Depreciation	2,059	4,000	4,000
Provision for losses on assets acquired from insured institutions	13,415,099		
Provision for losses on subrogated and insured accounts in institutions in liquidation	2,723,736		
Total expense	76,494,859	64,358,567	68,624,028
Net income for the year	88,606,155	155,787,212	136,059,225
ANALYSIS OF RETAINED EARNINGS [1]			
Retained earnings, beginning of year	775,295,681	863,901,836	1,019,689,048
Retained earnings, end of year	863,901,836	1,019,689,048	1,155,748,273

[1] In addition to retained earnings which are credited to the primary reserve, additional premiums (prepayments) and return on additional premiums are credited to a secondary reserve. (See statement C.)

STATEMENT OF FINANCIAL CONDITION

Mr. EVINS. Your financial condition statement is page 166. You have cash with the U.S. Treasury. In 1967 it was $59 million. Now it is down to $7,900,000. Tell us about this decline.

Mr. WORTHY. In 1966 you will note it is $59 million. The reason for that is that at the end of the year we were in the process of making a $48 million loan to an insured institution in California and we had transferred about $52 million out of our special series notes into cash. The loan was disbursed the next day, I believe.

Mr. GREENEBAUM. This was as of June 30 that you had this money in cash.

Mr. WORTHY. Yes. Now, ordinarily we will keep $5 million or sometimes a little more in cash. Quite often we will convert it retroactively to special series notes at the end of a month. The Treasury pays 2 percent on these notes. We do have to keep a substantial cash balance because of the nature of our insurance liability.

Mr. EVINS. Your investments were $1,516 million in 1966 and $1,728 million in 1967 and is estimated to be $2,500 million in 1969.

Mr. WORTHY. Right.

Mr. EVINS. The accounts receivable also increase, from $41 million in 1966 to $52,800,000 in 1969. Now, the assets acquired from insured institutions goes down. So that they must be operating and you are not acquiring them. Now, loans to insured institutions, $15 million to $80 million. They have to have more loans to keep them sound.

Mr. HORNE. Also, this is frequently to assist an association that has taken over a sick association.

Mr. TREVAS. To facilitate a merger.

Mr. WORTHY. We have used this method on three or four occasions to solve a problem.

Mr. HORNE. It is usually better when we can effect a merger, Mr. Chairman, than to pay out, although we follow whichever procedure, in our opinion, is least expensive to the insurance corporation.

Mr. JONAS. Of course you take a risk when you do that; you load the sound institution with a lot of unsound paper.

Mr. HORNE. We stand back of that. We work it out so that we stand back of the unsound paper.

Mr. WORTHY. Our theory is that the private institution can make a more efficient disposition of these marginal assets than we could.

Mr. JONAS. It is recourse transfer.

Mr. HORNE. Yes.

STATEMENT OF FINANCIAL CONDITION

Mr. EVINS. Place the financial statement of the corporation into the record, page 166.

(The page follows:)

C. STATEMENT OF FINANCIAL CONDITION

	1966 actual	1967 actual	1968 estimate	1969 estimate
ASSETS				
Cash with U.S. Treasury	$59,310,116	$5,060,256	$5,825,586	$7,995,772
Cash with banks	808	33,403		
Investments	1,516,701,000	1,728,268,000	2,124,268,000	2,521,268,000
Accounts receivable	41,225,844	37,570,335	45,071,422	52,866,104
Assets acquired from insured institutions (net)	105,937,800	84,843,895	76,843,895	56,843,895
Loans to insured institutions	15,000,000	80,000,000	80,000,000	80,000,000
Subrogated and insured accounts in insured institutions in liquidation (net)	64,763,330	96,158,076	96,158,076	96,158,076
Deferred charges	29,389	39,011	30,000	30,000
Furniture, fixtures, and equipment (net)	20,700	29,997	30,997	31,997
Total assets	1,802,988,987	2,032,002,973	2,428,227,976	2,815,193,844
LIABILITIES				
Current liabilities	4,890,919	16,507,126	19,058,036	19,442,003
Deferred credits: Unearned insurance premiums	44,191,450	49,163,370	55,417,039	60,182,872
Total liabilities	49,082,369	65,670,496	74,475,075	79,624,875
INSURANCE RESERVES				
Primary reserve	775,295,681	863,901,836	1,019,689,048	1,155,748,273
Secondary reserve (additional premiums)	959,437,602	1,082,792,866	1,309,263,873	1,550,068,895
Reserve for accrued return on additional premiums	14,308,010	19,002,186	24,299,980	29,251,801
Reserve for unpaid additional premiums—prepayments	4,865,325	635,589	500,000	500,000
Total insurance reserves	1,753,906,618	1,966,332,477	2,353,752,901	2,735,568,969
Total liabilities and insurance reserves	1,802,988,987	2,032,002,973	2,428,227,976	2,815,193,844

CREATION AND GROWTH OF INSURANCE CORPORATION

Mr. EVINS. Now the creation and growth of the Insurance Corporation is shown on page 169. The chart is on page 170. It shows insured State-chartered and federally insured institutions. Membership reached 4,488 in 1967. Down in the fourth paragraph of page 171 you say the estimated number of insured and uninsured savings and loan associations at December 31, 1967, was 6,117. Of this number, 4,491 were insured. Now, that 4,491 includes others that are uninsured but still members.

Mr. WORTHY. Not all of these are members of the Bank System.

Mr. TREVAS. 400 of them, of the roughly 2,000, are not.

Mr. EVINS. Are uninsured?

Mr. TREVAS. That is right.

Mr. EVINS. There is no liability with the Insurance Corporation?

Mr. TREVAS. No, sir; that is right.

Mr. EVINS. You just list them?

Mr. HORNE. Yes; as a point of information for the committee.

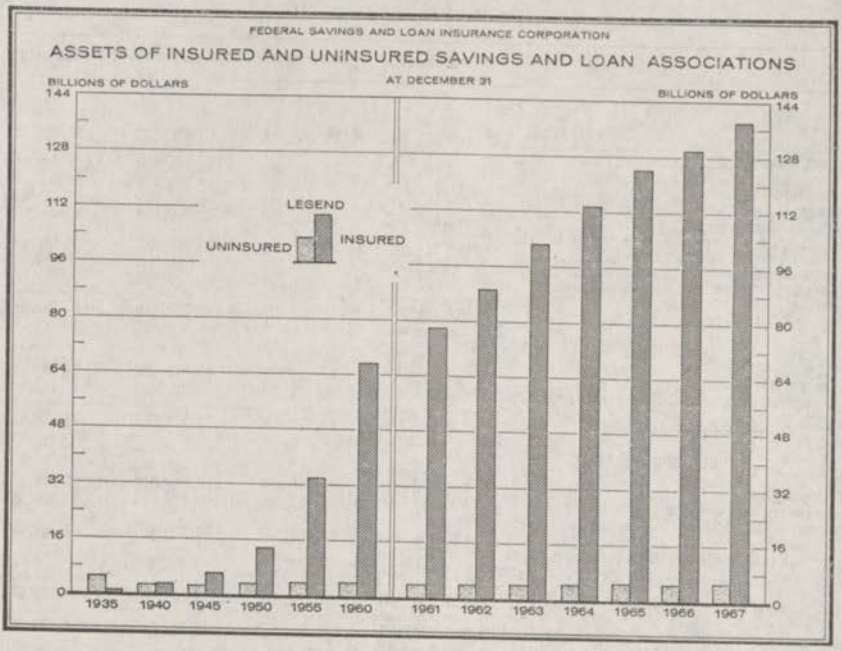
Mr. EVINS. Then you have approximately the same chart on page 172, showing the uninsured have remained relatively constant over the years.

Mr. TREVAS. Yes.

ASSETS OF SAVINGS AND LOAN ASSOCIATIONS

Mr. EVINS. Place this chart into the record.

(Page 172 follows:)



RATIO OF RESERVES TO POTENTIAL LIABILITIES

Mr. EVINS. Now as to insurance claims on page 176, has the growth of your reserves been commensurate with the growth of the liability?

Mr. WORTHY. Yes, sir. Our ratio of reserves to potential liabilities has been on the increase since 1961.

Mr. EVINS. What is the situation at the present time?

Mr. WORTHY. We hold reserves amounting to 1.62 percent of savings capital and creditor obligations.

Mr. EVINS. Not in percentages, but in dollars?

Mr. WORTHY. Our reserves total $2,050 million right now.

Mr. EVINS. A little over $2 billion in reserves.

Mr. WORTHY. Right.

Mr. EVINS. How much is insured now?

Mr. WORTHY. $120 billion.

Mr. EVINS. $120 billion insured, and $2 billion-plus in reserve.

Mr. HORNE. Yes. I might point out as fuller explanation to the committee, that this $2 billion we have in the Insurance Corporation, while theoretically it is to insure the $120 billion of savings in the industry, we also require each association to maintain a certain reserve to serve as its first line of defense. So if the system works as we intend for it to work—of course, it does not always do so—we would have today approximately the $2 billion in the Insurance Corporation that Mr. Worthy is talking about and we would have another probably $8 billion or $9 billion of reserves within the institutions themselves.

Mr. WORTHY. I might also point out that we have a call on the Treasury for $750 million and on the industry for approximately 1 percent of their savings, which is a little over $1 billion.

Mr. EVINS. You could call on the industry for 1 percent.

Mr. HORNE. If we have to, yes. You gave us that authority in 1965.

Mr. EVINS. But an individual institution is not responsible for the defaults of a sister institution or another institution?

Mr. HORNE. That is correct; only indirectly. He pays his insurance premium to the Insurance Corporation and this is where, of course, we obtain the money to payoff one that has gone sour. So the good ones have frequently contributed to paying out the savings of a bad one.

Mr. WORTHY. It would not be a contribution but only a deposit that they would make with us.

Mr. EVINS. They do not like it, but it is required by law to make the whole system sound.

Mr. HORNE. Yes, sir. The 1 percent additionally we could levy you are talking about is separate and apart from the regular insurance premium which they pay in to the insurance corporation annually. That 1 percent is a backup.

Mr. EVINS. You don't anticipate calling on this supplemental 1 percent.

Mr. HORNE. We never have.

INSURANCE LIABILITY

Mr. EVINS. Place in the record pages 175 through 177.

(The pages follow:)

Insurance liability.—The following table shows the potential liability of the Corporation as of the dates indicated:

Potential liability in billions at June 30—

1946	$5.7	1964	$93.5
1950	10.5	1965	102.5
1955	27.4	1966	109.6
1960	54.7	1967	118.4
1961	62.6	1968[1]	126.5
1962	72.0	1969[1]	135.1
1963	82.3		

[1] Estimate.

The potential liability of the Corporation increased from $109.6 billion at June 30, 1966, to $118.4 billion at June 30, 1967, an increase of 8 percent. It is expected to be $126.5 billion by June 30, 1968, and $135.1 billion by June 30, 1969, an increase of 14.1 percent in the 2-year period.

Insurance claims.—Since its inception through June 30, 1967, the Insurance Corporation has had a total of 69 settlement cases; 31 of these occurred in the last 10 years. Losses, including provision for losses, have amounted to $103.7 million as indicated in the following table (dollars in thousands):

Method of settlement	Number of associations	Number of investors protected	Net insurance losses (including provision for losses)
Acquisition of assets	13	75,782	$51,809
Acquisition of assets and contribution	5	25,244	8,097
Contribution	36	93,799	10,578
Contribution and loan	1	14,542	5,500
Loan	3	75,309	0
Loan and acquisition of assets	1	26,137	5,259
Receivership	10	48,896	22,452
Totals	69	359,709	103,695

As indicated, contributions were made to 42 institutions; 10 institutions were placed in receivership and liquidated, and in 19 cases the Corporation purchased the assets of 14 State-chartered institutions and five Federal-chartered institutions. The losses, including provision for losses, represent approximately 8.9 percent of cumulative gross income through June 30, 1967.

Borrowing position.—Under Public Law 576, approved June 27, 1950, the Corporation is authorized to borrow from the U.S. Treasury such funds, not exceeding $750 million outstanding at any one time, as in the judgment of the Federal Home Loan Bank Board are required for insurance purposes. As this authority has never been exercised, there are no obligations of this type outstanding.

Retirement of capital stock.—Pursuant to section 5(h) of Public Law 576, approved June 27, 1950, the Corporation on July 1, 1958, completed the retirement of its entire capital stock.

Retirement of the stock, amounting to $100 million, began in fiscal year 1951. The amount of the capital stock retired each year was equal to 50 percent of the Corporation's net income for the fiscal year.

During the life of the stock, the Corporation paid out in the form of a return in lieu of dividends, $42,976,000; almost the entire amount was paid to the Secretary of the Treasury.

PROBLEM CASE WORKLOAD

Mr. EVINS. You have never exercised your borrowing authority from the Treasury?

Mr. TREVAS. That is right.

Mr. WORTHY. We have not.

Mr. EVINS. On page 181, you talk about your workload. You state as of December 31, one case is pending which involves a contribution to facilitate a merger and a purchase of up to $12 million in problem assets. Several mergers of problem institutions will be consummated in a few months. Loans to two insured institutions can reasonably be anticipated in the approaching months.

Finally, there is a distinct possibility that the next 6 months will witness receiverships with the ensuing payout of insured savings in three institutions with savings aggregating $132 million. You made a loan of $48 million to an association to facilitate acquisition of its sound assets. You extended loans in the amount of $17 million to two associations, and executed an agreement to grant loans to a third institution in order to prevent their default, and you paid insurance in 1967 in two cases of default. You have a great record and it is very impressive. You cover this bad record way over here on page 182.

Mr. HORNE. That isn't intentional, Mr. Chairman. That is just simply a part of the record of the FSLIC.

Mr. EVINS. We wouldn't want it at the beginning. You have it in the right place. Tell us about your problem institutions.

Mr. HORNE. Let me explain, Mr. Chairman, that we are talking about two things here. We are talking about the associations described here. Then we do have some additional associations that are problem cases that I mentioned earlier in my testimony, which have not yet reached the stage that they come under the domain of FSLIC.

Mr. WORTHY. Actually, in calendar 1967, we only had five cases which we handled by merger.

Mr. EVINS. You handled five cases by merger last year.

Mr. WORTHY. Right. They were merged. This year we have already had one merger which has now been consummated, and we are working on another one.

Mr. EVINS. Is that in calendar year 1968?

Mr. WORTHY. That is right. We are in the midst of negotiations on another merger which will be consummated within the next 30 days. Then going from that, I really expect that we will probably have two or three receiverships during this calendar year.

CURRENT RECEIVERSHIP CASES

Mr. EVINS. Do you have any receiverships in operation now?

Mr. WORTHY. We are the receiver of an association in Phoenix, Ariz., and the State of Illinois is a receiver of two in their State.

Mr. EVINS. That one is called the Gibraltar.

Mr. WORTHY. That is right.

Mr. EVINS. That is a strong-sounding name, to go under.

You have two in receivership at this time in Illinois?

Mr. WORTHY. Yes; two in Chicago and one in Arizona. We anticipate two more this year.

Mr. HORNE. As you know, Mr. Chairman, usually if a State chartered, federally insured association goes under, the State has the right to make or not to make us the receiver. We prefer that the State make us a receiver because we can liquidate usually at a lesser cost to the Insurance Corporation than the State can, but frequently the State will, itself, retain receivership even though we have had to make the payout.

Mr. EVINS. Well, if it is insured by Federal Savings and Loan Insurance Corporation you immediately are involved, whether the State asks you to be a receiver or not.

Mr. HORNE. Yes; we certainly are.

Mr. EVINS. You want to assume the responsibility, and if the State gives it to you, you will gladly take it.

Mr. HORNE. Yes; because we will usually save the Insurance Corporation money when we do so.

Mr. EVINS. The five that merged last year and the two that merged this year, you will save the assets and the companies will be operating.

Mr. HORNE. Yes, sir.

Mr. EVINS. In the receiverships, you sell the assets and you pay off the shareholders a percentage?

Mr. HORNE. We pay off the shareholders; yes, sir. We pay the shareholders up to the full amount legally insured, now $15,000.

Mr. TREVAS. That is more than——

Mr. HORNE. We pay them immediately.

Mr. WORTHY. In the *Gibraltar* case that you mentioned, we were paying the savers the full $10,000, which was the limit at that time, within 5 days after the appointment of a receiver for the purpose of liquidation.

Mr. EVINS. Does the Insurance Corporation take physical custody of the properties or is the receiver appointed through a court?

Mr. WORTHY. Through the court.

Mr. HORNE. In the case of *Gibraltar*, the State of Arizona made us the receiver. In the case of the two in Chicago, the State authorities retained receivership for themselves.

Mr. EVINS. I think that is a very good record; of the great numbers of institutions and the large amounts of money involved, you are going to have a few bad apples.

Mr. HORNE. Bound to.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record page 182.
(The page follows:)

During the 18 months ended December 31, 1967, the Corporation took the following actions with reference to problem institutions:

1. Paid insurance in fiscal 1967 in two cases of default and acquired approximately $35 million in subrogated share accounts. In one of these associations the Corporation was named as receiver for the purpose of liquidation.

2. Agreed to purchase $4.4 million in assets from an association in order to prevent a default.

3. Made a loan of $48 million to an association to facilitate acquisition of its sound assets and related savings by a sound institution.

4. Extended loans in the amount of $17 million to two associations and executed an agreement to grant loans to a third institution in order to prevent their default.

As of December 31, 1967, one case is pending which involves a contribution to facilitate a merger and a purchase of up to $12 million in problem assets. Several mergers of problem institutions which involve contributions are contemplated and will probably be consummated in a few months. Loans to two insured institutions (one an addition to an outstanding loan) can reasonably be anticipated in the approaching months. Finally, there is a distinct possibility that the next 6 months will witness receiverships with the ensuing payout of insured savings in three institutions with savings aggregating $132 million.

Each of these actions acted (and will act) to add substantially to the workload of the Corporation.

HISTORICAL AND FINANCIAL BACKGROUND OF THE FHLBB

Mr. EVINS. You have a general statement here in the appendix; we will put in the record, for informational purposes, pages 199 and 200.
(The pages follow:)

HISTORICAL AND FINANCIAL BACKGROUND OF THE FEDERAL HOME LOAN BANK BOARD

The Federal Home Loan Bank Board was established by the Federal Home Loan Bank Act, approved July 22, 1932, to provide a permanent credit reservoir for thrift and home-financing institutions through the creation of regional Fed-

The Home Owners' Loan Act, approved June 13, 1933, gave authority to the banks by investing, over a period, $124,741,000. This investment was retired by the banks, over the years, at a rate in excess of statutory requirements. As of July 2, 1951, the Government's investment had been fully repaid. Since that time the capital stock of the 12 banks is owned by the member institutions.

The Home Owners' Loan Act, approved June 33, 1933, gave authority to the Board to charter and supervise local mutual institutions to be known as Federal savings and loan associations. These associations were to serve as a means of encouraging local thrift and home financing.

On June 27, 1934, title IV of the National Housing Act provided for the creation of the Federal Savings and Loan Insurance Corporation and placed it under the direction and management of the Federal Home Loan Bank Board. The capital stock of the Corporation was $100 million. It was subscribed for by the former Home Owners' Loan Corporation. Retirement of the stock began in 1951. By July 1, 1958, the Corporation had completed the retirement of the stock.

The Federal Savings and Loan Insurance Corporation insures the safety of savings against loss up to $15,000 for each saver or investor in all federally chartered associations and in State-chartered associations which apply and qualify for such insurance.

From the date of its creation in 1932 until April 25, 1939, the Federal Home Loan Bank Board functioned as an independent establishment reporting directly to the Congress and the President. On April 25, 1939, by congressional approval of the Presidents Reorganization Plan No. 1, the Board and the organizational units under its jurisdiction were grouped under the Federal Loan Agency along with other related Government corporations and organizations.

The Board continued under the Federal Loan Agency until February 24, 1942, when by Executive Order No. 9070 the five-man Board was vacated and its Chairman was made Commissioner of the "Federal Home Loan Bank Administration," the units formerly under the Board being retained. The Executive order placed the Board under the National Housing Agency, together with the Federal Housing Administration and the Federal Public Housing Authority.

Under Reorganization Plan No. 3 of 1947, effective July 27, 1947, a bipartisan Board of three members was substituted for the single Commissioner and the "Home Loan Bank Board" became a component part of the Housing and Home Finance Agency.

The Board continued in this relationship until the enactment of the "Housing Amendments of 1955," approved August 11, 1955, which reestablished the "Federal Home Loan Bank Board" as an independent agency.

Reorganization Plan No. 6 of 1961, effective August 12, 1961, transferred to the Chairman of the Board, the Board's functions with respect to the overall management, functioning, and organization of the Agency. The appointment, removal, and direction of personnel, the distribution of business among and communication of Board policies to such personnel, the enforcement of policies, as well as other administrative and management functions were transferred to the Chairman. Nothing in the transfer impinges upon the ability of the members of the Board to act independently with respect to substantive matters. In carrying out his managerial functions, the Chairman is governed by the general policies of the Board; the Board has the authority to approve the Chairman's appointments of the heads of major administrative units, and the other Members of the Board retain their control over the personnel in their immediate offices.

FEDERAL HOME LOAN BANK INTEREST RATES

Mr. JONAS. State briefly for the record the basis on which you charge different banks a different rate of interest for their borrowings. You have 12 member banks and you have a different rate, do you not?

Mr. HORNE. I want to make certain that I know specifically what your question asks. Are you talking of the rates that the member associations pay for the money they borrow from the bank?

Mr. JONAS. Yes.

Mr. HORNE. All right, sir. That varies in accordance with what the board of directors at the particular bank authorizes. We at the Board level give the individual boards of directors latitude, that is, the directors of the individual 12 banks, a latitude between 5½ and 7 percent. So the board of directors operate within that range themselves.

Mr. JONAS. It is not based, then, as I understood, on the rate they have to pay on their own debentures that they issue?

Mr. HORNE. Well, that is one of the points that the board of directors will—that is, the board of directors of that particular bank will consider.

Mr. JONAS. They have the discretion?

Mr. HORNE. Within the range of 5½ to 7.

Mr. JONAS. That is why so many of the rates are different?

Mr. HORNE. Yes, sir.

EFFECT OF PUBLIC LAW 90–218 ON BOARD'S OPERATIONS

Mr. EVINS. Mr. Chairman, state for the record the effect, if any, of Public Law 90–218 on the Board's personnel and obligations?

Mr. CALLAHAN. The information passed on to me, Mr. Chairman, from the Bureau of the Budget was that this law, as passed, did not

apply to the Bank Board's operations since we do not operate with appropriated funds.

Mr. HORNE. In other words, Mr. Chairman, if I may express appreciation to you and other members of the committee for your understanding of our particular crucial situation evidenced by the wording that you put in your record last year; the Bureau of the Budget took that into consideration in determining whether or not this 10 percent was going to be applied to this agency. Also in considering your wording they took into consideration that here on the one hand we had increasing assets, we have had to a great degree increasing problems, and we are entirely self-supporting so far as public funds are concerned.

Mr. EVINS. Although it has an effect on expenditures?

Mr. HORNE. Bookwise yes, sir; bookwise it does, but not on appropriated funds.

They took all of these things into consideration and decided from the standpoint of the security of the $145 billion industry they should leave us to proceed under the restrictions that we were already under and not make those restrictions at that time any sharper than they already were.

Mr. EVINS. We want to commend the Board for its important work. It has an important responsibility. We wish you a lot of good luck and success. Mr. Greenebaum, do you have anything to say?

Mr. GREENEBAUM. No, sir.

Mr. EVINS. Mr. Rand?

Mr. RAND. Nothing at all, Mr. Chairman.

Mr. EVINS. Thank you very much.

TUESDAY, FEBRUARY 27, 1968.

APPALACHIAN REGIONAL COMMISSION

WITNESSES

JOE W. FLEMING, COCHAIRMAN
JOSEPH E. NAPOLITANO, SPECIAL ASSISTANT TO THE FEDERAL COCHAIRMAN
EDWARD B. CURRAN, PROGRAM COORDINATOR
EARL SCHMITT, COMPTROLLER

Mr. EVINS. The committee will come to order.

We have with us this morning our friends from the Appalachian Regional Commission. Mr. Joe W. Fleming is Federal Cochairman. Mr. Joseph E. Napolitano is the Special Assistant to the Federal Cochairman. Mr. Edward B. Curran is Program Coordinator, and Mr. Earl Schmitt is the Comptroller.

Mr. Chairman, your State representatives are not in attendance with you this morning.

Mr. FLEMING. We would be happy to supply them at a future date, Mr. Chairman.

Mr. EVINS. It would be well for the State representative to attend the hearings at some future date.

I believe this is about the fourth hearing we have had with the Commission. Heretofore it has been fractionated, but this time the programs are consolidated into one budget.

Mr. Chairman, we would be glad to hear you.

GENERAL STATEMENT

Mr. FLEMING. There is a statement in the front of the justification which summarizes the entire program. I would like to ask your consent to submit this for the record.

Mr. EVINS. The entire statement may be included. It is an excellent statement.

(The statement follows:)

PROGRAM SUMMARY

Fiscal 1969 will be the fourth full fiscal year of the Appalachian regional development program. It is the first full year for which this Committee has had the opportunity to review the program in its entirety. Fiscal year 1968 appropriations were included in the supplemental appropriation bill enacted shortly before the end of the first session of this Congress. Funds for the highway program were not included, having been previously appropriated in the State-Justice-Commerce appropriation bill.

A total of $213,600,000 is requested for all programs authorized by the Appalachian Regional Development Act as amended for fiscal year 1969. In addition, the $63,643,000 in obligational authority will be carried over from fiscal year 1968 to fiscal year 1969 as required by Public Law 90-218, which limits obligations in fiscal year 1968. Total obligations contemplated for fiscal year 1969 are, therefore, $277,243,000. This is an increase of $25,769,000 over current estimated obligations for fiscal year 1968. Virtually all of the increase will be in the highway program where the engineering and right-of-way acquisition, financed in the early phase of the program, are producing a great many more construction projects than have occurred in prior years.

We are all aware of the need for every economy consistent with the public wel-

fare and each item in the fiscal year 1969 appropriation request has been carefully analyzed to present to the Congress the minimum request possible. The basis for each request is covered in the section-by-section justification but an example might be helpful. One hundred and twenty-five million dollars is requested for the development highway and access road program. This is at least $100 million below what could be used on projects now authorized. Through the use of the advanced financing provisions of the 1967 amendments, it is anticipated that much of this deficit can be made up by the States. The appropriation request is the minimum which, in the judgment of all concerned, is adequate to exhibit a continued Federal commitment to the construction of the system.

By way of background, it is necessary to review the Appalachian program in the context of the events and conditions from which it evolved. Between 1950 and 1960, two million people migrated from the Appalachian region which was suffering from several severe economic changes—the decline of subsistence agriculture, the development of new machinery for mining coal which greatly reduced the need for manpower, the obsolescence of old industries and the decline of employment in timbering and other resource-oriented employment. These factors made the Appalachian region the greatest single concentration of rural poverty in the country.

These peculiar economic circumstances of the Appalachian region in 1960, while not created by, were certainly being perpetuated by, its inability to take full advantage of existing government programs.

Much has been said about the concept of federalism—creative federalism as President Johnson described it when he signed the original legislation into law on March 9, 1965—"The objectives of this Appalachian bill are important. But the origins of the measure are equally important. Originated by the Governors of the Appalachian States, formed in close cooperation with the Federal Executive, approved and enacted by the Congress of all the people, this is the truest example of creative federalism in our times." The success which the Appalachian program has achieved is due to its translation of those words into effort and organization—emphasizing the basic fact that modern government is and must be more of a process than an institution.

The origins of the Appalachian program say a great deal about federalism. Two events took place in May of 1960 which were to reflect these factors and determine the governmental response to them. The first was the focusing of national attention on the economic ills of the region in the course of the West Virginia presidential primary. Coupled with this was the realization by the region's Governors that while the States could not hope to do the job themselves, only the full participation of the States could make the new programs work. This resulted in the organization of the conference of Appalachian Governors.

In 1963, President Kennedy established a joint Federal-State Commission to propose solutions to the economic problems of the region. The report of this group, signed by the Governors and the Federal agency heads involved, was delivered to President Johnson in the spring of 1964. Legislation was submitted to the Congress and ultimately enacted March 9, 1965. The most innovative part of the legislation was the joint State-Federal Commission it established.

The Appalachian Regional Commission is composed of the Governors of the 13 Appalachian States, and the Federal Cochairman. The act provides that a State cochairman shall be elected by the Governors and the Governors have established a 6-month term for this position. Governor Buford Ellington is now serving as the State cochairman of the Commission.

In addition, there is a States regional representative who is selected and paid by the Governors. It is his responsibility to serve as the chief policy and administrative officer of the Commission for the States and to advise and assist the States on questions involving plans, programs, and projects. The States have budgeted $110,000 to support this office in fiscal year 1969.

Each of the Governors has appointed a representative who attends the monthly meetings of the Commission when the Governors are not present. They are generally members of the Governors' personal staffs or the heads of major State departments. In two States, the Governors' appointees are private citizens.

The program urged by the Governors and the President's Appalachian Regional Commission is well-known to most of you. It centers on:

Transportation in providing funds for a system of major highways through the region—complementary to the interstate routes—to provide new access for commerce into and within the region.

Better use of the region's water resources through the development of a comprehensive water resource plan for the region.

Better use of the land in the region by restoring land damaged by mining and through treatment of other lands with Federal cost-sharing.

Better public facilities for health, education, sewage treatment, and other areas—through a program of supplemental grants-in-aid to make better use of Federal programs in these fields.

It was the need for this last element that says much about Appalachia's tragic lag behind the rest of the Nation. Under the matching requirements of the grant-in-aid programs, the region did not receive a fair share of the funds from national programs simply because communities lacked the tax base to provide the local share.

Many Appalachian communities did not receive Federal funds for such facilities as a library, a sewage treatment plant, a hospital, or a vocational school, merely because local matching funds could not be raised.

In addition, there were other needs, besides funds, which had to be taken into account. These needs, while present in many parts of the country, were more evident in Appalachia because past governmental efforts (at all levels) had not been able to successfully deal with the long-range problems.

As the economic recovery began in the country in the spring of 1961 and continued on into 1963, it became painfully evident that Appalachia was not sharing in the general economic expansion. Indeed, if this expansion were to continue (as it has now for more than 7 years) the region's lag would become even greater—making it even harder for its economy to catch up.

To make the necessary beginning, three pertinent facts were identified: first, that scattered planning efforts on even a statewide basis, much less on a county-by-county basis, would not solve the overall regional problem; second, that the region had much to offer in the way of resources and manpower if they could be effectively utilized; and third, that the Federal treasury was not sufficiently funded to alleviate both the effects of the region's economic ills and the causes of those ills.

In addition to these judgments about what was needed, there was added a directive as to where it should go. Recognizing that there would never be enough money—or time—to meet the demands in the region, the Congress wrote into the act the single directive that funds should be invested to serve areas "where there is a significant potential for the future growth" and where the expected return on public dollars invested will be the greatest.

By law, the decisions on the potential in each State was left to its Governor subject to review by the Commission to be determined on the basis of an overall economic strategy for growth in the Appalachian portion of each State. Each State decides where growth can be produced. It must also decide what types of investments in what kind of facilities would produce the greatest return on the public dollars invested.

It was clear to the Commission from the outset that for each State to recommend the most appropriate projects, each State would have to prepare, and progressively refine, a State development plan, designed to be a program of specific actions, employing all available governmental programs and funds, to overcome obstacles to development and capitalize on the potentials of the area. Increasingly, these plans have become more specific in their evaluation of obstacles and potentials, and this has enabled the States to identify better their "areas where there is a significant potential for future growth."

This process of State planning for development has led each State to identify those programs deemed most useful to further growth in its Appalachian area and the specific locations at which the projects under these programs should be undertaken.

Commission resolutions, unanimously adopted, established the process of requirements for the State development plans, but each document is the product of a State. As such, it reflects the unique understanding and institutions of that State and provides evaluations that blend local awareness with the wider perspective provided by Commission policy and research. Collectively, these State plans define four distinct areas of the region that have common problems and common objectives.

Northern Appalachia, which encompasses the southern tier of New York, most of the plateau area in Pennsylvania and Maryland, northern West Virginia, and southern Ohio, the problems are related to the transition from dependence on the coal-steel-railroad economy to new types of manufacturing and service employment. Many communities suffer from environmental problems which are the legacy of past industrial and mining activities, and include mine drainage pollution, mine subsidence, blight from strip mining, and mine fires and flooding. Air pollution is also a problem, particularly in the river valleys. While there are deficiencies in urban facilities, they are not as acute as in other parts of the region, so there is less emphasis in the State plans on developing uniform public facilities for the smaller urban communities as there is in other parts of the

region. High priority has been given to solving environmental problems through the use of mine area restoration, water pollution control, supplemental grant funds, and other Federal and State programs. A second priority in northern Appalachia is in the field of technical education, particularly at the post high school level. The reason for this is that new skills are required to make the transition from the old economic base to the new, more diversified light manufacturing now evolving. New types of training and education must be provided. Pennsylvania has concentrated on the construction of technical education centers. Ohio is moving in the same direction and the Appalachian funds have prompted West Virginia to construct its first multicounty vocational facilities and begin planning for a statewide system.

A third priority in northern Appalachia is the development of industrial, commercial, and recreational sites where basic public facilities and access must be provided. Access road funds have been used to facilitate industrial park development, partciularly in Pennsylvania.

Central Appalachia, covering approximately 60 counties in eastern Kentucky, southern West Virginia, Virginia, and Tennessee, is quite different. The States have determined that urbanization must take place faster if adequate services and employment opportunities are to be developed for the million and a half people now living in the area.

The choice is between faster growth of communities in this area and continued outmigration. While this will ultimately call for a comprehensive "mix" of public investments, three initial priorities have been established. The first is transportation. Unless the 60 counties can be linked to the national markets and commutation of the labor force facilitated, it appears that development in this area will be virtually impossible. As a result, the largest share of the highway program has gone into this topographically rugged area.

As in other areas, education has high priority. Heavy emphasis is being placed on high school and post high school vocational and technical education, and complementary facilities such as educational television and some 2-year colleges. The States have recognized that such projects alone will not solve the educational difficulties of this area. Working through the Appalachian Education Advisory Committee, efforts are underway to provide and improve elementary and secondary education as well as preschool training funded under Federal and State programs.

The third priority in central Appalachia is in the field of health. The comprehensive health demonstration program, under section 202, will cover 75 percent of the population in this area where the health needs are the greatest in the region. Other health projects aided wtih supplemental grant funds emphasize the promotion of long term care beds in association with competent and well-staffed hospitals, and mental health and mental retardation facilities. Kentucky's program this year will have a very large proportion of mental health and nursing home facilities, in addition to the continued funding of vocational education plans previously implemented in that State under the Appalachian Act.

The third major subregion of Appalachia is the southern valley section covering Mississippi, Alabama, South Carolina, and parts of Tennessee and North Carolina and Virginia. Here, industrialization and urbanization is occurring quite rapidly. New jobs are being generated in such fields as apparel, textiles, and food processing, plus a sampling in other industrial sectors. The States of this area have recognized several priority problems:

The first is the need to develop an educational system capable of producing a skilled labor force. While it is recognized that there is a substantial deficiency in the elementary and secondary school system, the States have also recognized the need to provide high school and post high school level vocational education on a large scale, if enough trained technical employees are to be provided for the apparent growth industries here in the South. Georgia has completed, with Appalachian Act assistance, the construction of a post high school vocational education system in Appalachian Georgia. This year emphasis has shifted to the construction of high school level vocational education facilities in order to help young people qualify for jobs in the growing industrial economy. South Carolina has placed emphasis on post high school technical schools geared to those industries with technical manpower deficiencies. New industries now developing in southern Appalachia require professional personnel as well. As a result, the States are concentrating on the development of higher education facilities and the medical profession.

A second priority is the providing of public facilities to realize their full potential of developing industrial communities which need water treatment facilities, water supply system, and a variety of other public services needed for growth.

The fourth region is the Appalachian highlands, reaching from northern Georgia, through the Great Smokies of Tennessee and North Carolina, into the Blue Ridge of Virginia, and the Alleghenies of West Virginia, Maryland, Pennsylvania, and New York. This sparsely populated territory will be used primarily for recreation and tourism for the rest of Appalachia as well as the remainder of the eastern United States. The Commission, working with the Federal resource agencies, is attempting to determine how much potential can be properly exploited through comprehensive recreation complexis in which private capital is involved.

Each State contains portions of one or more of these broad regions and its plan reflects its deficiencies in its priorities. It is an intention to develop these priorities in even greater detail during the coming year. The following section-by-section summary sets forth the accomplishments, needs and plans for the use of individual programs.

It is clear that significant growth in the region will be tied to the national trend toward urbanization. Contrary to some popular thought, much of Appalachia comes close to or exceeds the national average in manufacturing, employment and such special activities as mining. The great deficiency in the region's economy is in service industries—the largest and fastest growing segment of the national economy. This appears to be directly related to the predominantly rural character of the region. Its communities must grow if the region is to supply opportunities for its people.

Thus, the Appalachian program in a nutshell has two essential elements—the development of health and educational services to exploit the primary resource of the region—its people—and the development of the communities of the region through better access, environmental improvement, housing, and better public facilities.

The final and most essential element for development must come from the initiative and capital of the private sector of the economy.

The Appalachian Regional Development Act directs the Appalachian Commission not only to administer the programs authorized but also to develop comprehensive plans and programs, prepare recommendations on the administration of existing programs, stimulate State and local activities addressed to the problems of the region, and to provide a forum for consideration of problems of the region. While a great deal of the Commission's time in the initial period of its existence has been addressed to the implementation of programs for which the Commission is specifically responsible, an increasing amount of time and effort is being expended on the direction and utilization of efforts outside of the Appalachian Act. For example, a contract is now being negotiated by the Commission and the Office of Education, under which the Commission, its staff and the Education Advisory Committee, which it has organized, will assist in the development of projects under titles I and III of the Elementary and Secondary Education Act.

In response to the mandate to provoke public discussion of problems of the region and to suggest solutions thereto, the Commission is sponsoring with the assistance of the American Institute of Planners, a conference to be held in Charleston, W. Va. in April, addressed to the human, environmental, institutional obstacles to development in the region. It is working with the Federal Aviation Agency on the development of the Appalachian portion of the National Airport Plan with the Department of Labor on means for tying vocational education more closely to the needs of industry and, with the assistance of the Commission's Health Advisory Committee, on the establishment of goals, objectives and priorities for the improvement of health facilities in the region through Hill-Burton, mental health and other programs. These examples are not exclusive: they do, however, provide some illustrations of the types of planning being undertaken in addition to the plans required for utilization of the Appalachian Act funds.

Appalachian planning by the States has at the State level reached well beyond Appalachian Act funds. In West Virginia, for example, the Governor, by executive order, has directed that the State development plan initially fostered because of the Appalachian program be used as a guide for State expenditures as well. Development districts initiated because of the program (and funded either from section 302 funds or under the Public Works and Economic Development Act) are beginning to organize, plan and influence a variety of public expenditures outside the Appalachian Act. These are examples of indirect benefits to the region which are not reflected in the program-by-program justifications for funds authorized by the Appalachian Act.

Mr. FLEMING. I would like to summarize my statement, go from that to the section-by-section analysis and respond to any questions that the committee may have.

Mr. EVINS. You may proceed.

Mr. FLEMING. As you indicated, the appropriation request for fiscal 1969 represents the first time that we have come before this subcommittee to testify on the entire Appalachian program. We were here slightly less than 3 months ago to present a justification relative to fiscal 1968, at that time appearing on all programs other than the highway program.

Funds for the Appalachian Development Highway System had previously been carried in the State-Justice-Commerce bill for fiscal 1968. The budget justification for fiscal 1969 includes the highway program.

The request for new obligational authority is $213.6 million for the program sections, and a total of $862,000 for the administrative expenses of the Commission.

In preparing for this hearing I discovered an error that appears both in the budget and our justification. There is an item of $213,000 requested for my office and staff. This is higher than it should be. It should be $196,000. There is a $17,000 error in favor of economy which we would like to point out initially.

Mr. EVINS. You are presenting a deduction of $17,000, and we can commend you for your action.

Mr. TALCOTT. If you are going to err, that is a good direction to err.

Mr. FLEMING. I am sorry we cannot give you a little more. Also, the justification, takes into account the effects of Public Law 90–218, which mandates some carryover into fiscal 1969. The total program level for fiscal 1969 which is contemplated is $277,243,000.

The justification and my comments this morning will be addressed to those larger totals rather than just the new NOA requests.

MIGRATION OUT OF RURAL AREAS

The purpose of the Appalachian program was rather well summarized if not by name at least by topic in an editorial in this morning's Washington Post entitled "The Great Migration," in which the editorial writers of the Post point out that the President's request for new urban programs, particularly housing, are prompted by a massive migration of people out of the rural areas of this country and smaller towns of this country into major cities.

One of the principal sources of this migration over the last 2½ decades has been the Appalachian region.

Mr. EVINS. Mr. Chairman, we recognize this out-migration from all sections of rural America to the cities. It is a problem with which we are all concerned, and many programs are directed towards slowing it down or reversing the trend.

The Census Bureau has made a report that it has been slowed down to a certain extent, but the migration continues. The programs are not being implemented fast enough to curtail this migration.

You may proceed.

Mr. FLEMING. I think this editorial pleads the issue rather well. The purpose of the Appalachian program first and foremost, as testified to in relation to the initial legislation, is to provide jobs in Appalachia by developing the public facilities necessary to attract private

capital into the region, provide opportunities in the region for people who heretofore have been leaving on a very large scale.

As my formal statement points out, between 1950 and 1960 approximately 2 million people migrated out of the Appalachian region, the bulk of this migration going to the major metropolitan areas of the North and Northeast.

In a nutshell the Appalachian program is designed to build up those communities within the region, both within the communities and in their labor markets, their watersheds and so on, to provide opportunities in them. I think it is clear that there will be migration within the region; and in the future as the communities grow, we are hopeful those opportunities will provide attractions to people who now live in the region who prefer to stay there rather than going to Chicago or Detroit or Cleveland. It has been an all too common pattern in the past.

Mr. EVINS. You point out:

> The decline of subsistence agriculture, the development of new machinery for mining coal which greatly reduced the need for manpower, the obsolescence of old industries and the decline of employment in timbering and other resource-oriented employment. These factors made the Appalachian region the greatest single concentration of rural poverty in the country.

HISTORY OF THE PROGRAM

Mr. FLEMING. That is correct, Mr. Chairman. It might serve to establish the record here this morning for me to review it briefly. The Appalachian program as authorized by the Appalachian Act came into being as a result of the joint Federal-State effort to arrive at common solutions to what are clearly represented here as regional problems. At the initiative of President Kennedy and the conference of Appalachian Governors a Federal-State task force was formed in 1963 to develop program recommendations. Their recommendations, embodied in a report to the President and to the Congress, were eventually submitted in the form of legislation in 1964, and the Appalachian Act was passed in March of 1965. The act was not intended to be a panacea.

Mr. EVINS. Mr. Chairman, to get this straight, the act was passed in 1965.

Mr. FLEMING. That is correct, March 9, 1965.

Mr. EVINS. Then it was extended in 1967.

Mr. FLEMING. That is correct, Mr. Chairman.

Mr. EVINS. What is the expected life of the Commission and its programs under the present legislation?

Mr. FLEMING. Under present law the Commission is authorized to continue through the end of fiscal 1971.

And the highway program is authorized through 1971, for a 6-year period.

Mr. EVINS. The Commission's program has been extended through 1971.

Mr. FLEMING. One caveat, Mr. Chairman, the nonhighway programs are only authorized to fiscal 1969 and new authorizing legislation will be required next year to complete the last 2 years of the program.

Mr. EVINS. Very good.

PROGRAMS INVOLVED IN THE ACT

Mr. FLEMING. The programs embodied in the act are, in large measure, supplemental to other activities that are being carried out

by Federal and State agencies. They are designed to fill the gaps, if you will, between existing programs to make maximum utilization of other programs, and not intended to represent a complete package of activities.

The legislation based on the task force recommendation centers on some primary areas of concern that are common throughout the region and which were not being met and would not be met through existing activities of the Federal-State and local governments.

Briefly summarized, these fall in the areas of transportation which has long been an impediment to development throughout the region, largely due to the very high cost of construction of highways through the mountains, extremely precipitous terrain that is common in the entire region. The highway trust fund supports the Interstate and ABC highway programs. Allocations from the Interstate programs are computed on authorized mileage. The ABC programs which would normally provide Federal support for improvements on the routes involved in the Appalachian system allocates funds on the basis of mileage rather than cost of construction. The net effect is that construction through the Appalachian Region has been substantially less than the same funds will buy in less precipitous and less rugged terrain.

In addition the declining tax base which marks a number of the States in the Appalachian area has contributed to an inferior road network, or in relation to modern standards no network at all in some areas.

For these reasons the highway program was authorized.

The second element, aside from transportation, is addressed to the natural resources of the region, particularly its water resources. This region experiences the highest annual rainfall on the average in the country. And yet because of the steep slopes and because of other problems such as the abandonment of farms and strip mining, erosion, and quick runoff is a very severe problem.

Mr. Evins. If I might interrupt, these several programs in the Appalachian Act were designed to supplement existing programs as additional remedies.

Mr. Fleming. That is correct, Mr. Chairman.

There is a water resources survey for which no funds are requested here. This has been fully funded up to the authorization, and it is anticipated that a report will be completed by the end of this calendar year and submitted to the Congress at the beginning of the 91st Congress.

There are in addition other efforts proceeding under the aegis of the Soil Conservation Service. The ASCS utilizes its regular program and funds authorized by section 203 to deal with erosion, which has been a very severe problem throughout the region.

The last major category of facility development authorized by the legislation are funds for public facilities in the critical areas of health and education, transportation. This is an effort to utilize all Federal grant-in-aid programs authorized nationally which prior to the passage of the Appalachian Act had tended to bypass this region.

Historically the region has received substantially less than its population would warrant from Federal grants-in-aid, largely due to the fact that local matching funds could not be raised in the magnitude sufficient to attract grants-in-aid under existing Federal programs operated nationally. For that reason the supplemental grant program authorized by section 214 was included to provide additional funds

to ease the burden on local communities, counties, and other applicants. The effect has been to greatly increase the Federal grants-in-aid going into the region to the point where the level is approximately on par with the population of the region for fiscal 1966 and 1967 which are the 2 years we have had full experience with the program.

The structure of the act is unique. We have discussed this before, and I think it would be useful to allude to it briefly.

STRUCTURE OF THE COMMISSION

It was clearly recognized when this legislation was formulated that a strictly Federal grant-in-aid program would tend to perpetuate some of the problems that have existed in the past, and that a selective use of this money would be required if the region was to feel any significant economic impact.

For that reason and because of their initiative in making State commitments in support of development efforts for the region, the State governments were given a major role in the administration of this activity.

The Appalachian Commission is composed of myself, representing the Federal Government, and Governors of the respective States. The State cochairman is Governor Ellington of Tennessee. The States have a major role in planning projects.

NUMBER OF STATES

Mr. EVINS. There are 13 States now in the Appalachian area embraced in this act.

Mr. FLEMING. That is correct.

Mr. EVINS. And the Governors select their chairman on an annual rotating basis. Governor Ellington of Tennessee is the cochairman for 1968.

Mr. FLEMING. It is on a 6-month basis.

Mr. EVINS. Six months?

Mr. FLEMING. Through the end of this fiscal year.

Mr. EVINS. Who was the State representative for the past 6 months?

Mr. FLEMING. Gov. Dan Moore of North Carolina, and prior to that Governor Smith of West Virginia.

Mr. EVINS. They only elect a Governor for 6 months.

Mr. FLEMING. Yes.

Mr. EVINS. They do not give him a second term?

Mr. FLEMING. I do not think there is a constitutional limitation on that. It has been a matter of practice thus far.

The States, by Commission resolution, are required to develop a developmental investment plan for the use of these funds as well as State funds and other Federal program money. Those investment plans delineate within the States the areas where they see a prospect for promoting development.

Mr. EVINS. Each State is to recommend its own plan, and the Governors know the situation of their States best.

Mr. FLEMING. That is correct. These plans delineate the areas where there is a prospect for promotion of growth, relate funds available under this act and other programs to the exploitation of that potential.

Mr. EVINS. Have each of the 13 States submitted a State development plan?

Mr. FLEMING. They have, Mr. Chairman. This is done on an annual basis and updated each year. Those plans include an annual request for funds, which are reviewed and which the Commission modifies or adopts. In many cases there are some modifications made in what the States initially request.

FOUR AREAS OF APPALACHIA

Mr. EVINS. Mr. Chairman, you might outline the four distinct areas of Appalachia.

Mr. FLEMING. I would be happy to. I think this a short-hand way of summarizing what the States have said in their plans and what the Commission has developed through its own research.

There are four fairly distinct areas of the Appalachian region with each having a special set of problems.

In the northern part of the region in Ohio, Pennsylvania, and New York, and to some extent western Maryland, the problems tend to relate to the modification or the transition of the economy from an existing industrial base related to railroads, coal, steel, to other forms of manufacturing in that there has been some decline or some stagnation of employment in these areas, and some obsolescence in the facilities where the industry itself tends to be on the move.

In these areas the States have concentrated on vocational training geared to the development of skills relevant to new job opportunities, or the development of industrial sites for new kinds of manufacturing and commercial employment, utilizing the access road primarily, and on dealing with the environmental problems created by the legacy of both mining and industrial production, in the latter case air pollution.

Mr. EVINS. They must deal with the problems of strip mining and mine fires.

Mr. FLEMING. That is correct. Particularly in the anthracite area of Pennsylvania the mine fire control and subsidence control programs authorized by section 205 of the Appalachian Act have been of major benefit in preventing both further subsidence underground in the Wyoming Valley and its adjacent areas and in preventing air pollution through escaping gases which in many cases has actually forced people from homes and plants. Any development in this area is obviously related to the control of these fires which could spread through many of these valleys. The coal seams underline the valleys and run through them.

PROGRESS IN MINE PROGRAM

Mr. EVINS. Mr. Chairman, you have assessed the problems. Are you beginning to attack them?

Mr. FLEMING. In the case of the mine program we feel some substantial progress has been made. Every major mine fire in anthracite Pennsylvania has had some work initiated on it, either under this program or through the normal Bureau of Mines activity. There will be some additional costs to actually control some of these, but the engineering has proceeded to establish the parameters of the fires to outline in more detailed fashion what is needed to be done to cope with them.

To move on to the central Appalachia area which can be roughly defined as the upper Cumberland area of Tennessee and the areas of West Virginia and Kentucky and western Virginia, the problems there

tend to be more closely related to decline in agricultural employment and the decline of mining, these areas never having had a strong manfacturing or industrial base. The State plans and the projects developed by the States and local areas in this central Appalachian region focus on somewhat more basic kinds of problems, such as better health care. The section 202 demonstration health program focuses on these problems and on transportation. The bulk of the highway program is addressed to transportation through this area which is the most isolated and most remote in the region.

An examination of the highway map that is inserted in the justification under section 201 will give a pretty clear picture of how the road network is being developed with these funds.

OTHER AREAS OF THE REGION

Mr. EVINS. Go ahead and summarize the region.

Mr. FLEMING. It shows how the transportation network is designed to both promote development in this region and promote access from within this region to the major centers which surround it. There is also a heavy emphasis on vocational training.

In the southern end of the region, South Carolina, Alabama, and adjacent areas of North Carolina, the transition is being made from a rural to an urban economy. The principal projects and principal programs being emphasized here tend to go to vocational and higher education, addressed to providing manpower for the cities which are developing in this area.

The fourth area of the region is the eastern highlands, which is dominated by national forests, is relatively sparsely populated, and where, frankly, the Appalachian Commission has not spent much money. Most of the big public investment in this area will be in the recreational field through a number of Federal agencies and through some State agencies as well as private capital.

We have engaged with the States in a planning program with the Federal agencies, the Forest Service and Park Service, and so on, to try to get maximum economic mileage out of activities which they have underway.

Those basically are the four areas that emerge from the State plans with a brief description of the programs that are being emphasized.

ESSENTIAL ELEMENTS OF PROGRAM

Mr. EVINS. You say at the bottom of page 7:

> The Appalachian program in a nutshell has two essential elements—the development of health and educational services to exploit the primary resource of the region—its people—and the development of the communities of the region through better access, environmental improvement, housing, and better public facilities.

Mr. FLEMING. That is it.

Mr. EVINS (reading):

> The final and most essential element for development must come from the initiative and capital of the private sector of the economy.

My question is: To what extent is this being effected?

Mr. FLEMING. There are a number of signs that this is taking place, although it is a very hard thing to analyze statistically. There are, of course, major State efforts in each one of these States for the attraction of new capital, new plant investment. There are major efforts on the

part of the private groups having an interest in motivation to develop the community. For example, there is an Appalachian utility committee that cooperates in relation to development problems and the utilities work closely with one another to try to stimulate new investment in the region.

There are an increasing number of new plants locating in the region. Some of these could be directly related to the potential availability of the highways, for example, which will provide access into them. Some others, particularly in the southern end of the region, are still attracted by relatively low-wage rates, which is a problem and which should not be unduly exploited as an attraction for investment.

What we are trying to do, frankly, with the vocational education program and other education investments that are being made under this program, and others, is to get the labor force in this area to compete for higher wage and higher skilled industries. There have been some heavy industry locating airframe fabrication, and these kinds of things which are still rare, but increasing.

Mr. EVINS. Mr. Chairman, I was interested in your text on page 8, where you refer to comprehensive planning designed to stimulate State and local activities. I hope you are doing that.

The program provides "a forum for consideration of problems of the region." And you have had this forum.

That is a very good statement as to what the Commission has been organized for.

EXPENDITURES TO DATE

Mr. JONAS. Mr. Fleming, the record shows that we have appropriated for various Appalachian programs $583,766,000 through 1968. How much of that has been spent?

Mr. FLEMING. Total obligations? I can supply a figure for the record.

Mr. JONAS. First I want to know how much of that has been spent. How much unexpended balances do you have as of some given date, any date you want to pick out?

Mr. FLEMING. Just so that I can clarify the terminology, we normally deal, as do most Government agencies, with obligations.

Mr. JONAS. I understand.

Mr. FLEMING. Expenditures? I will give to you a precise figure for the record.

Mr. JONAS. Please do.

Mr. FLEMING. I would imagine expenditures at this point would probably be in the range of $150 million to $200 million. Obligations would be in the range of $345 million as of today.

Mr. JONAS. You spent approximately, you estimate, $150 million and you obligated how much?

Mr. FLEMING. $345 million.

Mr. JONAS. How can you say that you will carry forward into 1969 only $63 million of unobligated balances if you had $583 million appropriated and have only obligated $345 million? Do you expect to obligate the balance between now and June?

Mr. FLEMING. We do.

Mr. JONAS. Down to the $63 million?

Mr. FLEMING. That is correct. The bulk of those obligations will be in the development highway program, supplemental grant program, vocational education, and the health program.

PROGRESS MADE TO DATE

Mr. JONAS. Can you give us any indication or any testimony or any evidence indicating that any substantial progress has been made in the area resulting from the expenditure of this $150 million? You stated in your general statement that during a certain period of time 2 million people outmigrated from Appalachia because of these conditions that we are trying to rectify. Have you any statistics or can you obtain them from the Census Bureau or from whatever source the original statistics were developed showing the rate of outmigration since we began this program in 1965? We have had 2 or 3 years of it now. We would like to know in specifics what you can cite to show that this program is doing what it is supposed to do and is justifying the expenditure of these substantial sums of money.

Mr. FLEMING. I would like to respond to that in two ways. First the figures on 2 million are accurate—as accurate as any statistics can be—being drawn from the 1950 and 1960 censuses. As you know, the statistical data available between decennial censuses vary somewhat in quality. The best evidence we have from the Office of Business Economics in the Commerce Department, from work that has been done in each of the State governments as well as some being done by the Bureau of the Census on an estimated basis is that outmigration from the region as a whole has slowed dramatically. There is still some outmigration from the most critically afflicted or economically troubled areas, principally eastern Kentucky, southern West Virginia, and Pennsylvania.

Mr. JONAS. Can you put in the record the best estimate you can get from the Census Bureau and any other sources that are available as to what the figures will show 1960 through 1967?

Mr. FLEMING. We have estimates, and I will be glad to provide those.

Mr. JONAS. And show the basis on which the estimate was made.

(The information follows:)

THE APPALACHIAN REGIONAL COMMISSION.
Washington, D.C.

Hon. JOE L. EVINS,
Chairman, Subcommittee on Independent Offices and HUD, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: During my appearance before your subcommittee on February 27, Mr. Jonas requested that current data on the economic condition of the Appalachian Region be submitted for the record. As I stated at that time, much of the data available covers only those periods of the regular census reports and in many particulars these data are not available for the period since 1965. Other types of information are available on a State or national basis, but not on a regional basis. To the extent practicable, however, data have been prepared from Federal and State sources that are indicative of the trend of events in the Appalachian region.

As I indicated, the nature and magnitude of the Appalachian program does not permit us to associate the changes reflected in these data with the effect of the program. Overcoming the fundamental handicaps of the region such as isolation and poor education will require years of effort and these efforts will not have their full impact for several years. It is also very difficult to separate the effects of the regional program from those national programs that have been operative and whose impact is felt in the region.

The attached tables show the most current information available relating to population, employment, and welfare recipients in the Appalachian region.

Sincerely yours,

JOE W. FLEMING.

Population and Population Change

The region's share of the national population has continued to decline. Between 1960 and 1965, three of the State portions in the region lost population, and in only four was the national rate of population growth equaled or exceeded. For the most recent period of 1965–66, losses were experienced in three State portions, and in only one was the national growth rate equaled or exceeded. Only West Virginia has consistently lost population, and only Maryland has consistently exceeded the rate of national population growth.

The region's rate of population growth remains low compared to the Nation, as it was in the 1950–60 decade, as the rate of outmigration continues to remain close to the rate of natural increase.

According to available estimates, Appalachian Kentucky, Pennsylvania, and West Virginia had fewer residents in 1966 than they had in 1960, though in the first two mentioned, the population decline was reversed in 1965–66. This population loss is, in part, responsible for declining rates of unemployment.

ESTIMATED POPULATION 1966 AND 1965, AND POPULATION 1960 AND ANNUAL RATES OF PERCENT CHANGE 1965–66 AND 1960–65 FOR THE UNITED STATES, THE APPALACHIAN REGION, AND THE APPALACHIAN PORTION OF EACH STATE

[All numbers in thousands]

	Estimated population		Population	Estimated annual rate of percent change	
	1966	1965	1960	1965–66	1960–65
United States	196,920.0	193,795.0	179,323.2	1.6	2.7
Appalachian region	18,231.7	18,111.0	17,726.6	.7	.7
Appalachian portion of—					
Alabama	2,161.9	2,137.0	1,982.3	1.2	2.6
Georgia	738.5	733.9	675.0	.6	2.9
Kentucky	909.1	906.4	922.2	.3	−.6
Maryland	218.9	214.2	195.8	2.2	3.1
Mississippi	435.4	440.1	406.2	−1.1	2.7
New York	1,033.1	1,029.6	1,000.1	.3	1.0
North Carolina	1,004.9	993.4	939.7	1.2	1.9
Ohio	1,157.5	1,154.2	1,119.6	.3	1.0
Pennsylvania	5,925.4	5,876.4	5,930.8	.8	−.3
South Carolina	622.9	616.5	586.5	1.0	1.7
Tennessee	1,710.5	1,687.1	1,607.7	1.4	1.6
Virginia	504.6	506.5	500.3	−.4	.4
West Virginia	1,809.0	1,815.0	1,860.4	−.3	−.8

Source: State planning and health agencies and selected State universities.

Employment and Unemployment

Since 1962, the number of jobs in the region has been growing at an annual rate at least equal to the national performance, and between 1965 and 1966 the national performance was exceeded. The number of jobs has been growing in the Appalachian portion of every state in the region. The figures showing the change for any one year probably show expected random variations, but the overall 4-year pattern reflects the effect on the region of an extended period of national prosperity.

Matching the growth in jobs has been the decline in unemployment. The region in 1966 had about 10 percent of the national total, compared to almost 14 percent in 1962. Here again, the change in any one year is not as significant as the longer term performance, but overall the trend in the region is encouraging.

EMPLOYMENT AND UNEMPLOYMENT 1966, 1965, AND 1962, AND ANNUAL RATES OF PERCENT CHANGE 1965–66 AND 1962–65 FOR THE UNITED STATES, THE APPALACHIAN REGION AND THE APPALACHIAN PORTION OF EACH STATE

[All numbers in thousands]

	Employment			Annual rate of percent change		Unemployment			Annual rate of percent change	
	1966	1965	1962	1965–66	1962–65	1966	1965	1962	1965–66	1962–65
United States	72,895.0	71,088.0	66,702.0	2.5	2.2	2,875.0	3,366.0	3,911.0	−14.6	−4.6
Appalachian region	6,360.9	6,121.7	5,742.4	3.9	2.2	284.2	331.9	538.0	−14.4	−12.8
Appalachian portion of:										
Alabama	768.9	735.0	661.9	4.6	3.7	32.9	33.9	47.7	−3.0	−9.6
Georgia	228.7	228.1	207.0	.3	3.4	10.1	11.4	17.1	−11.4	−11.1
Kentucky	209.6	203.7	193.8	2.9	1.7	21.9	22.5	29.1	−2.7	−7.6
Maryland	76.4	71.4	69.3	7.0	1.0	3.7	4.4	6.1	−15.9	−9.3
Mississippi	147.9	141.1	135.3	4.8	1.4	6.6	8.4	11.8	−21.4	−9.6
New York	409.0	391.2	383.8	4.6	.6	15.2	17.3	24.0	−12.1	−9.3
North Carolina	392.3	373.8	344.7	4.9	2.8	14.7	20.3	22.7	−27.6	−3.5
Ohio	335.9	321.1	311.6	4.6	1.0	17.2	19.1	26.4	−9.9	−9.2
Pennsylvania	2,163.3	2,107.0	1,999.1	2.7	1.8	80.8	103.0	216.7	−21.6	−17.5
South Carolina	274.6	260.7	219.8	5.3	6.2	8.3	10.3	9.4	−19.4	3.2
Tennessee	628.5	599.4	551.2	4.9	2.9	23.4	26.2	41.6	−10.7	−12.3
Virginia	142.7	125.8	124.0	13.4	.5	6.8	7.5	11.7	−9.3	−12.0
West Virginia	583.1	563.4	540.9	3.5	1.4	42.6	47.6	73.7	−10.5	−11.8

Source: Bureau of Labor Statistics and State employment security agencies.

Employment by Industry

Data on industrial employment are not exactly comparable to the overall employment data in the preceding table, but the same trends are reflected. In the most recent year, growth in employment has occurred in every category, and comparing 1962 to 1966, every sector, except mining, now provides more employment than at the beginning of the period. Of the total growth of over 600,000 jobs reported, about 275,000 are in manufacturing, 70,000 in contract construction, over 100,000 in retail and wholesale trade, and more than 110,000 in services. This is a pattern of relative growth that tends to mirror that national experience, tempered by the region's historical employment structure.

NUMBER OF EMPLOYEES BY INDUSTRY, MID-MARCH PAY PERIOD 1966, 1965, AND 1962, AND ANNUAL RATES OF PERCENT CHANGE 1965-66 AND 1962-65 IN THE APPALACHIAN REGION [1]

Industry	Employment [2]			Annual rate of percent change	
	1966	1965	1962	1965–66	1962–65
Total	4,215,411	3,948,207	3,596,456	6.8	3.3
Agricultural services, forestry, fisheries	8,527	8,436	6,693	1.1	.9
Mining	136,529	134,533	144,112	1.5	−2.2
Contract construction	221,503	192,746	150,385	14.9	9.4
Manufacturing	1,944,671	1,833,583	1,667,866	6.1	3.3
Transportation and other public utilities	220,788	213,002	205,911	3.7	1.1
Wholesale trade	208,898	203,728	190,402	2.5	2.3
Retail trade	696,024	655,757	599,025	6.1	3.1
Finance, insurance, and real estate	161,438	155,730	140,208	3.7	3.7
Services	533,680	495,556	422,969	7.7	5.7

[1] Source: "County Business Patterns," 1966, 1965, and 1962. Excludes employees not covered by the social security program. Also, data for the following types of employment covered by the social security program in whole or in part are excluded from the basic tabulations in this report: Government employees, self-employed persons, farmworkers, and domestic workers reported separately. Also, railroad employment subject to the Railroad Retirement Act and employment on oceanborne vessels are not included.

[2] Employment in "County Business Patterns" amounted to approximately 66.7 percent of total U.S. paid civilian employment in 1966, 66.2 percent in 1965 and 63.7 percent in 1962.

Welfare Recipients

In the period between 1963 and 1967, the number of welfare recipients and the number of unemployed in the United States showed conflicting trends. While the number of unemployed fell by 1.1 million, the number of welfare recipients rose by 1.2 million. There are undoubtedly a number of factors at work to explain these trends, such as changes in welfare eligibility, that would be operative in the region as they are in the Nation. Though no regional data are presently available, there is no evidence that the region would show a different trend.

COMPARISON OF WELFARE RECIPIENTS AND UNEMPLOYMENT FOR THE UNITED STATES, 1963-67

Year	Welfare recipients	Unemployment
1963	7,421,600	4,070,000
1964	7,635,950	3,786,000
1965	7,756,750	3,366,000
1966	7,935,600	2,875,000
1967	8,648,300	2,975,000

Mr. Evins. There was some testimony earlier that there had been some slowdown in the outmigration.

Mr. Fleming. Generally, I think it would be erroneous to indicate that this change has resulted from the Appalachian Act, per se. I think it has had some influence; but I think it would be very hard to relate it in any kind of definitive sense. In the road program, for example, which has perhaps as much consequence for future development in the region as anything else that is being done here, engineering has

been initiated on every segment that can be built with the funds authorized. We have approximately 85 miles of new highway open as a result of this program, but that represents only about 5 percent of what is going to be done. It is very hard to say that that 85 miles has any regional impact. And, obviously, until the road is there to be driven on, it cannot translate into lesser driving times, and therefore some advantage to private capital.

Mr. JONAS. Will you undertake also to put in the record a statement showing a comparison of the number of people in the region on the welfare rolls now as compared with 1960?

Mr. FLEMING. We will be happy to.

Mr. JONAS. And I think another index that might be helpful to us in determining the effectiveness of this program is to show what increases in housing and industrial construction have occurred in the region.

Mr. FLEMING. All right. Fine.

Mr. JONAS. And perhaps new businesses established, and there may be others, and we would like to have—and I think it is important for the record to show—that the money we are spending down there is solving the problem that we are undertaking to attack. We need a review and some statistical information, if it is available, to support the contention that the program is solving the problem it was designed to solve.

Mr. EVINS. I think the committee as well as the Commission is interested in getting results, Mr. Chairman. You see, we appropriate the money and we want to see the results from it.

UNEMPLOYMENT RATE

Mr. FLEMING. I would like to respond further to Mr. Jonas by noting that the unemployment rate in the region as a whole is about a point and a half below what it was in 1965 when this was authorized.

Mr. JONAS. You would have to compare that with the rate around the country and relate it to how many people are in the Army, and all these other things.

Mr. FLEMING. Yes, this is a result of the expansion and growth in the national economy. The latest figures we have indicate that the unemployment rate for the region as a whole is about 1½ percent above the national average; and if you extract Appalachia from the national average, presumably the national average would go down a little bit and thus widen the gap. Unemployment in the region has tended to follow the national average down. When the national ratings go up a little or go down a little, the Appalachian region tags along behind it.

Mr. JONAS. From your statement, the money you have spent, much of it has been on roads, and it has not been spent in areas calculated to stimulate employment.

Mr. FLEMING. The highway program is strictly designed both to stimulate employment and to make employment opportunities accessible to people.

Mr. JONAS. If you can give us some figures showing the rate of new businesses established, any increased rate of industrial growth and housing starts, that would help us.

Mr. FLEMING. I would be glad to.

STORY FROM PITTSBURGH POST-GAZETTE

Mr. JONAS. I have one other question:

I was disturbed, Mr. Fleming, to read from the Pittsburgh Post-Gazette of January 11, 1968, a story written by Ingrid Jewell from which I quote the following:

"The Appalachian Regional Commission voted today to spend its money fast—before the President can freeze it or Congress can rescind it 'don't let scarce money lie fallow,' advised Federal cochairman Joe W. Fleming. So alarmed is the Commission its funds may disappear, its State representatives today adopted a 'program of reallocation.' This declares that a State which does not have detailed plans for projects it wants to undertake in the hands of the Washington office by April 1 will risk having its share of the Commission's money given to another State which has moved more quickly."

Now, it is not your primary objective to spend this money faster than the States are ready for it, is it, just because you have it available?

Mr. FLEMING. Mr. Jonas, my objective and the comments to which that story contained are to make maximum use of the program authorized by the Congress. The State governments sought to have this program enacted and to accept responsibility for developing the projects and doing the work required to make it effective on the ground.

The point you raised a minute ago about the gap between current obligations and the total availability for obligation pleads this point very well.

The highway program, for example, presently stands with 85 miles open to traffic with engineering underway on about 1,400 other miles with only $210 million obligated. The States committed themselves to do this job through fiscal 1971 when they came to the Congress in 1965 and asked for the program. It is my object to see that the program is implemented. The resolution to which that story is addressed is designed to do exactly what we have indicated to the Congress we would do, which is to put the funds where there are projects ready to move which are compatible with the standards in the act and with sound planning.

We have from the first day made highway funds available to those States which were prepared to do the work authorized under the general authorization. That is each State has an authorization or allocation of the authorized funds relative to mileage to be built.

Mr. EVINS. Mr. Chairman, nobody wants any money to be spent unwisely and uneconomically, but on the one hand we already started out berating the Commission for not proceeding, for not getting results, and for not stopping the outmigration, and on the next hand we berate you for spending too fast.

I think that you ought to carry out your mission. If I were to criticize you, I would criticize you on the first point, that is, not acting fast enough.

Mr. FLEMING. We have no intent to spend money for the sake of spending it. We have intentions, and the States fully concur in this, to make maximum utilization of programs authorized and funds appropriated by the Congress for the purposes for which those funds were authorized and appropriated.

Mr. JONAS. My point is you have $195 million of unspent funds from previously appropriated money, I mean the difference between what you have obligated and what you have already spent, and then you have $251 million from 1968 that you did not get until December,

so what you are trying to do is obligate 12 months' money in a period of 6 months; and this story, if it is true, indicates you are not doing it very wisely. You are just doing it to get it obligated.

Mr. FLEMING. The 195 is included in the 251.

Mr. JONAS. Well, you have had appropriations of $583 million.

Mr. FLEMING. Which includes the 251 and then some.

Mr. JONAS. Well, that is through 1968, that is right, $126.7 million. Anyway, I wanted your comment on this article. A person reading it would get the idea that what you are doing is what we used to criticize the executive branch, mostly the military, for rushing in to obligate all their money in June so that it does not lapse.

Mr. FLEMING. There is no intention to do that. These funds have not been tied to the fiscal year. I would regard it as a mistake to do so.

Mr. JONAS. I do not see how, if the article is correct, if X State is not ready for its plans to go forward, you can divert the money originally planned for that State to some other State because obviously it had not got plans ahead of the money that it foresees will be available.

Mr. FLEMING. I will give you an example of how this takes place. In the area of vocational education, for example, the States collectively indicate in present plans, projects in fiscal 1969 that total close to $90 million, and the amount of Federal funds that will be available, assuming the appropriation of funds requested here and the request under the Vocational Education Act of 1963, will be about $27 million or on a 50–50 basis, $54 million program. Thus, there is about a twofold—about a 2 to 1 discrepancy between what could be done and what can be funded.

If there is a vocational education school in Tennessee, for example, for which funds have been requested and then in March or April there is either a delay or failure on a bond issue or any one of the other issues that can affect such a commitment, we think it would be unwise to maintain a reservation of a quarter of a million dollars or $200,000, whatever it is, for a period of a year while they get their ducks in the row to move ahead with clearly identified projects if someone else has one that is compatible with their plans and the purpose of the act and is prepared to move.

What we are trying to do is to get maximum mileage out of the money that has been appropriated here, not wantonly spread it around the landscape.

I would certainly like to erase that impression if I can because it is certainly not my intent, and it is not the intent of the State governments involved.

Mr. JONAS. You would say that the article is fundamentally correct, but you defend your position?

Mr. FLEMING. I would say the words of the article are correct and the spirit is somewhat incorrect.

Mr. EVINS. What you are saying is if Ohio is not ready for its bond issue commitment, and South Carolina is, you would use the funds available for South Carolina. Wouldn't this help to stimulate the States?

Mr. FLEMING. In the case of the road program we have laid out a 6-year program and said we want every State to move as fast as we can to get it accomplished. If West Virigina is not prepared to move

a project, has it deferred because of a right-of-way problem or engineering problem——

ACCOMPLISHMENTS UNDER VOCATIONAL EDUCATION SECTION

Mr. EVINS. Turn over to section 211 just briefly. Here are some concrete results.

Somerset Area Vocational School in Somerset, Kentucky, is providing central post-secondary technical training for all the youth in the State in aircraft-related skills such as aircraft engine mechanics, aircraft instrumentation and control tower operations.

Here is one in Asheville, N.C. The Asheville-Buncombe Technical Institute has four extension courses serving 15 western North Carolina counties, offering training in electronics, mechanical, civil and chemical engineering, drafting, data processing, tool and die making, and radio and TV servicing.

Here is an unusual one. Greenville, S.C., has a school for six Appalachian counties which provides model programs in health occupations areas, offers courses in inhalation therapy, EKG technology, medical secretary training, surgical technology, and 19 other critical medical occupational areas.

I think those are to be commended. I think they are outstanding trade schools, one in Kentucky, one in North Carolina and one in South Carolina.

HIGHWAY PROGRAM PLANNING

Mr. BOLAND. With reference to the highway program you have indicated that planning is complete on the additional 1,400 miles.

Mr. FLEMING. It is underway.

Mr. BOLAND. Underway. If planning is underway in all the States, would it not be rather difficult to allocate some of the mileage from those States where the planning has not proceeded as rapidly as you would want, to other States?

Mr. FLEMING. What was done on the highway program is that shortly after the enactment of the act the Commission designated a system of highways, and after that an allocation of the total funds authorized to accomplish the program was made based on cost estimates that were established by the States and the Bureau of Public Roads so that West Virginia has an allocation relative to the number of miles it is supposed to do. North Carolina has an allocation. Tennessee has an allocation.

Relative to appropriated funds, the policy of the Commission has been to allocate those where the States have the capacity to proceed, subject to the limitation the State may not receive more than its allocation of the total amount authorized.

Mr. BOLAND. When do you expect that planning will be complete on the highways? You say it is underway. Most of your unobligated balances are in the highway program, are they not?

Mr. FLEMING. Yes. Planning has been initiated on the entire system in relation to route location that has been established on virtually every corridor. The next step beyond that is the design phase where they actually compute the pitch of the slope, the cut necessary to provide a roadway, the type of pavement required, drainage and that sort

of thing. In other words, the development of a set of plans that will establish a center line to permit the State to buy right-of-way.

Following right-of-way, then they are in the position to bid the construction contract.

Now, all States have undertaken location studies to establish precise location. We anticipate that design will be underway on every segment that can be built with these funds by the end of this fiscal year.

The States have committed themselves to that schedule, and it appears susceptible to accomplishment. This will produce a large number of projects.

The year 1969 is going to be a big peak as far as construction is concerned as all this engineering and right-of-way location that has been done in the first 2 years comes to fruition in the form of a demand for construction funds.

Mr. BOLAND. Do you anticipate that most of this will be obligated in fiscal 1969?

Mr. FLEMING. In fiscal 1968 and 1969.

Mr. BOLAND. 1968 and 1969.

Mr. FLEMING. The current amount available with the continuing resolution for highway program in fiscal 1968 is, in the aggregate through the life of the program, $316 million. At the end of January the obligation figure was $210 million. The chart, which is included in the text after page 5 under section 201, indicates the current capacity of the States to proceed.

HIGHWAY PROGRAM CONSTRUCTION CEILINGS

Mr. EVINS. Mr. Boland, if you will let me interrupt just a minute. Let us set the stage here to get this record straight and understand this and ask the chairman if this is correct.

Orginally, the Congress approved the building of 3,350 miles of development highway in Appalachia, and this included 1,000 miles of access roads.

Mr. FLEMING. Those are the original ceilings.

Mr. EVINS. Last year they added 350 miles of development roads, bringing the total of development roads to 2,700.

Mr. FLEMING. That is correct.

Mr. EVINS. And you added 600 miles of access roads, bringing the access roads to 1,600, so the total authorized highway construction in Appalachia is 2,700 miles of development roads and 1,600 miles of access roads.

Mr. FLEMING. That is correct. Those are the maximum mileages which can be legally constructed.

Mr. TALCOTT. You have been in the program now for a couple of years at least. Do you have any suggestions for improving the program? When Congress put the program together it was sort of helter skelter, hit or miss, and not a very precise program. It seems to me after a couple of years you would have some suggestions coming from the Commission itself as to programs which should be emphasized or programs which should be discontinued. Have you prepared any such project?

Mr. FLEMING. We made some suggestions in relation to the 1967 legislation which were generally adopted by the Public Works Com-

mittees in the legislation reported to the floor and subsequently by the full House and the Senate. The housing program which is authorized by section 207 was added as a recommendation of the Commission.

A number of modifications in the existing programs were made at the recommendation of the Commission. For example, the demonstration health program authorized by section 202 was really not implemented until legislative change could be sought in its structure.

Mr. TALCOTT. Looking at your budget request, it appears that there are four general programs: highways, health, vocational education, and then the supplemental programs which are your main ones. This takes up the bulk of your appropriations.

Mr. FLEMING. This is true.

Mr. TALCOTT. The Federal Government is already in these programs. I am wondering if you have discovered that your agency has developed too much duplication and if it would be better if it were all streamlined back into the respective general Federal programs?

Mr. FLEMING. As you know, Mr. Talcott, the administration of each one of these sections is undertaken by Federal agencies. The Commission's role is largely a planning and project development and approval activity.

NEED FOR PROGRAM

Mr. TALCOTT. My question is: Why the need for the Appalachian regional development program when the main bulk of your programs are already Federal programs that are already ongoing?

Mr. FLEMING. In the highway program, for example, it simply could not be accomplished within the framework of the trust fund program. There just is not enough money.

In the case of the supplemental grant program, these funds are used to really maximum utilization of a whole variety of other activities and programs being undertaken by the Federal Government in the field of education, health, airport construction, water pollution control, and the like.

Mr. BOLAND. These are the programs the local community would not be able to undertake on the basis of the regular formula?

Mr. FLEMING. That is correct.

Mr. TALCOTT. There is really nothing pecular about Appalachia except lack of local money?

Mr. FLEMING. There are some other things peculiar to Appalachia, and it is really the thing that the Appalachia Commission itself is addressed to, and that is the need for better institutions to plan and to use funds. Just money per se does not always do the job.

Mr. TALCOTT. When you refer to "better institutions" you refer to better local government?

Mr. FLEMING. Better local government, improved State government, and the State governments have responded to the availability of this program by increasing staff, increasing attention to planning overall program expenditures. Many of the Federal programs we are talking about are channeled through State government; education and health particularly. A number of States are in the process of developing proposals for using research funds under section 302, to attack local government problems, institutional limits on what local governments can

do, and how they can cooperate with one another in trying to put together some proposals for the legislatures.

Mr. TALCOTT. Is the minimum wage in all of the Appalachia States the same?

Mr. FLEMING. The Federal minimum wage? The Federal minimum wage is uniformly applicable. The State minimum wages vary somewhat.

One good example of a State activity relative to institution development that has grown out of this program: Right now in Kentucky there is being drafted a proposal for State housing and State nonprofit housing corporation to utilize the housing program incorporated in the Appalachian Act and to use with far greater effectiveness the FHA and other programs authorized through the Department of Housing and Urban Development. This results because there simply is a gap in the institutional capacity of eastern Kentucky to participate in these programs. There is a gap in financing. There is an effort on the part of the State here to take a particular problem and produce a solution to it, and this has come about largely because of discussions that have taken place among the States, between myself and the State governments and through the involvement of the Federal agencies through this program. That is one small example.

The local development districts program is probably the best example of where the State governments have taken the role of leadership in trying to produce multicounty cooperative organizations to combine tax resources, to combine county planning, to make maximum utilization of the dollars involved in this program. I do not know that I have completely responded to your question.

Mr. TALCOTT. That is a general answer to a general question. I believe that your comment about institutional deficiencies is quite apt. This is one of the major critical problems in Detroit and New York and most large cities. They just do not have the institutions or trained, competent people to cope with their problems, and the people are not much interested in changing their institutions.

Mr. FLEMING. I think frankly it is quite clear that one of the main reasons the State governments were given a role in this program is because the institutional capacity of local government through larger areas of this region is relatively poor. The counties are underfinanced and they are in many cases too small, and there is a need for providing some leadership at less than the Washington level which is too far away and yet big enough to do the job, and the State governments have, I think, exhibited quite a bit of initiative and talent and commitment in trying to fill that void.

Mr. EVINS. I understand you have had excellent cooperation. There was some thought earlier that there might be great difficulty among the Governors in deciding on priorities, but now the issues have been resolved. There is splendid cooperation. The Governors of each State recognize the problems of their State most acutely.

Mr. FLEMING. That is correct.

Appalachian Regional Development Programs

PROGRAM AND FINANCING

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
1.	Appalachian Development Highway system	68,158	145,000	178,341
2.	Demonstration health projects	14	20,000	29,769
3.	Land stabilization, conservation, and erosion control	3,360	3,000	3,000
4.	Mine area restoration	9,781	9,000	5,293
5.	Appalachian Housing fund		1,000	2,000
6.	Vocational education facilities	13,446	12,007	14,000
7.	Sewage treatment facilities	1,389	4,737	4,018
8.	Supplements to Federal grant-in-aid programs	40,618	51,000	37,561
9.	Research and local development district program	1,708	3,250	3,261
10.	Water Resources Survey program	1,741	2,000	
11.	Timber development	66	480	
12.	Fish and Wildlife program	521		
10	Total obligations	140,802	251,474	277,243
	Financing:			
16	Comparative transfers from other accounts	−140,802		
21	Unobligated balance available, start of year			−63,643
22	Unobligated balance transferred from other accounts		−188,417	
24	Unobligated balance available, end of year		63,643	
	New obligational authority		126,700	213,600
	New obligational authority:			
40	Appropriation		56,700	213,600
42	Transfer from other accounts		70,000	
43	Appropriation (adjusted)		126,700	213,600
	Relation of obligations to expenditures:			
10	Total obligations	140,802	251,474	277,243
70	Receipts and other offsets (items 11–17)	−140,802		
71	Obligations affecting expenditures		251,474	277,243
72	Obligated balance, start of year			297,165
73	Obligated balance, transferred		188,991	
74	Obligated balance, end of year		−297,165	−338,658
90	Expenditures		143,300	235,750

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	APPALACHIAN REGIONAL COMMISSION			
11.8	Personnel compensation: Special personal service payments		223	223
12.0	Personnel benefits		16	16
21.0	Travel and transportation of persons		11	11
41.0	Grants, subsidies, and contributions		54,000	40,572
	Total obligations		54,250	40,822
	ALLOCATION ACCOUNTS			
	Personnel compensation:			
11.1	Permanent positions	944	910	1,189
11.3	Positions other than permanent	12		
11.5	Other personnel compensation	4	1	1
	Total personnel compensation	960	911	1,190
12.0	Personnel benefits	74	57	77
21.0	Travel and transportation of persons	110	81	99
22.0	Transportation of things	7	13	18
23.0	Rent, communications, and utilities	43	38	45
24.0	Printing and reproduction	77	21	26
25.1	Other services	9,244	284	234
25.2	Services of other agencies	1,621	16	21
26.0	Supplies and materials	15	15	17
31.0	Equipment	22	34	35
41.0	Grants, subsidies, and contributions	128,629	195,754	234,659
	Total obligations, allocation accounts	140,802	197,224	236,421
99.0	Total obligations	140,802	251,474	277,243
	Obligations are distributed as follows:			
1.	Appalachian Regional Commission		54,250	40,822
2.	Department of Agriculture	3,426	3,480	3,000
3.	Department of the Army	1,741	2,000	
4.	Department of Commerce	42,326		
5.	Department of Health, Education, and Welfare	13,460	32,007	43,769
6.	Department of Housing and Urban Development		1,000	2,000
7.	Department of Interior	11,691	13,737	9,311
8.	Department of Transportation	68,158	145,000	178,341

PERSONNEL SUMMARY

	ALLOCATION ACCOUNTS			
	Total number of permanent positions	105	108	108
	Full-time equivalent of other positions		16	16
	Average number of all employees	92.3	76	94
	Average GS grade	11.0	12.0	12.1
	Average GS salary	$10,408	$11,986	$12,648

Mr. EVINS. We will take a look at this table on the first page.

On section 201, your highways, obligation authority is $128 million and you were appropriated $70 million in 1968 for a total of $198,341,000 and for 1969 you are asking for an appropriation of $125 million with carryover of $53,341,000 which would be a total for the program in 1969 of $178,341,000; is that correct?

Mr. FLEMING. That is correct, Mr. Chairman.

Mr. EVINS. And the same situation holds with respect to section 202, health; you are asking for an appropriation of $25 million with a carryover of $4,769,000, or total available for the program of $29,769,000; is that correct?

Mr. FLEMING. That is correct.

Mr. EVINS. Section 203, land development—there is very little activity there—$3 million.

Mr. FLEMING. $3 million.

Mr. EVINS. Timber development, section 204, nothing is recommended.

Section 205 relating to strip mining and mine fires, you are asking for an appropriation of $1,300,000 with a carryover of $3,993,000, for a total of $5,293,000. Will this amount $5,293,000, carry you to the total authorized amount for this particular function?

Mr. FLEMING. No, sir. That would leave a substantial amount of the authority uncovered.

Mr. EVINS. Under section 206 no funds requested, and in the field of housing $2 million. Vocational education has been indicated as one of the large programs. You have no carryover there, but you are asking for an appropriation of $14 million.

Mr. FLEMING. That does exhaust the authorization.

Mr. EVINS. This exhausts the authorization. I understand the various States have a much more ambitious program than these funds allow.

Mr. FLEMING. That is correct.

Mr. EVINS. For water and sewage, section 212, you have a carryover of $18,000.

Mr. FLEMING. That is correct.

Mr. EVINS. So you are asking for a $4 million appropriation and the $18,000 carryover. Would that be the actual amount of the authorization?

Mr. FLEMING. Yes, sir. That does exhaust the authorization.

Mr. EVINS. The supplemental is a popular and effective stimulant, section 214. You have a carryover of $1,261,000 in this area, and you are asking for $36,300,000 for a total of $37,561,000; is that correct?

Mr. FLEMING. That is correct.

Mr. EVINS. And for the local development district, you have a carryover of $261,000 and are asking for $3 million.

Mr. FLEMING. That is correct.

Mr. EVINS. It seems to me that is a rather small amount for the local development districts all over the 13-State area. You are asking for a total of $3,261,000.

In summary, you have a $63,643,000 carryover, and a new budget request of $213,600,000, for a totalof $277,243,000.

Mr. FLEMING. That is correct.

OBLIGATION FREEZE

Mr. JONAS. Have you ever had any of your expendable funds frozen by the Bureau of the Budget?

Mr. FLEMING. We were, as was the entire Government, under an obligation freeze, generally, through the last 3 months——

Mr. JONAS. Ten percent; I understand that.

Mr. FLEMING. Through October, November, and December last year, we suspended obligations on major construction projects.

Mr. JONAS. How did that affect you? How much did that affect you?

Mr. FLEMING. It just simply slowed down that obligation process you referred to a few moments ago.

Mr. JONAS. It stopped your obligating altogether for construction or anything else?

Mr. FLEMING. Well, there was some small obligation. For example,

we proceeded with engineering on the road program, but no construction contracts.

Mr. JONAS. Was your road program frozen in 1966?

Mr. FLEMING. No.

Mr. JONAS. Yours were not affected; that was interstate?

Mr. FLEMING. That was the trust fund.

Mr. JONAS. This freeze you had last fall, that was the freeze on expenditures or obligations?

Mr. FLEMING. Suspension of obligations.

Mr. JONAS. Do you know, have there been any freezes on expenditures?

Mr. FLEMING. No; there have not been. You mean liquidation of past obligations?

Mr. JONAS. Yes.

Mr. FLEMING. No.

Mr. JONAS. Has the freeze to which you referred been lifted now?

Mr. FLEMING. Yes; as of the first of the year. I think it is significant in the road program, for example, that obligations in January were in the neighborhood of $20 million.

Mr. JONAS. This $63 million, much of that comes about by reason of that joint resolution.

Mr. FLEMING. All of it.

Mr. JONAS. The 2 percent.

Mr. FLEMING. Two percent—10 percent.

Mr. JONAS. Did it affect your personnel; you do not have too many people, the 2 percent?

Mr. FLEMING. Actually, the cuts made took care of our obligations in that regard. So the continuing resolution did not affect it. We have refrained from filling some slots.

Mr. JONAS. Thank you.

SECTION 201—HIGHWAY SYSTEM

Mr. EVINS. Mr. Reporter, place in the record under section 201, Appalachian development highway system, pages 1 through 5 and the charts.

(The documents follow:)

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM, SEC. 201

	Public Law 89-4		Public Law 90-103	
Authorization	$840,000,000		$1,015,000,000	
	1965-66	1967	1968	1969
Appropriation	$200,000,000	$100,000,000	$70,000,000	[1] $125,000,000
Obligation	103,501,000	68,158,000	[2] 145,000,000	[2] 178,341,000

[1] Request.
[2] Estimate.

Through fiscal year 1968 $370 million has been appropriated under the authority of section 201 for development highway and access road construction. Public Law 90-218 necessitates a limitation of $145 million in obligations in fiscal year 1968 for a cumulative obligation total of $316 million through June 30, 1968. The $54 million in outstanding obligational authority coupled with a request for $125 million in new obligational authority will produce a program level of approximately $179 million in fiscal year 1969. This is the minimum level which is con-

sistent with maintenance of the schedule for the program set by the Congress in 1965.

As noted in the report of the President's Appalachian Regional Commission, one of the major factors contributing to the transportation problem in Appalachia is the topography of the region. The Appalachian Mountain Range, stretching in a general northeast-southwest direction through Appalachia, has been and still is a barrier to the east-west and north-south movement of goods and people.

Over the years, three major traffic corridors developed through these mountains. One paralleled the Pennsylvania-Maryland border where several major railroads, the National Pike, and the Lincoln Highway crossed the mountains and connected the east coast with the Ohio River. The second generally paralleled the North Carolina-Virginia border. Here the Wilderness Road passed through the Cumberland Gap and connected the Shenandoah Valley and the Virginia sea coast with Kentucky and the Ohio River tributaries. Third, an east-west transportation corridor crossed the mountains southeast of Charleston, W. Va. It furnished a more direct route from the tidewater area of eastern Virginia to the Ohio River Valley. This same mountain pass provided a north-south route from the central North Carolina area to Ohio. As Appalachia developed, these corridors became more and more important from a traffic standpoint and the Interstate System now follows them.

The completion of the Interstate System will be of great benefit to the economy of Appalachia. The Interstate System will generally follow the major traffic corridors, and its major effect will be in the improvement of transportation within these corridors. However, it will have a lesser effect on the more isolated and undeveloped areas of Appalachia. The development highway corridors are described below and plotted in the map which follows:

1. Corridors A, B, C, and K provide a north-south route located generally midway between Interstate 75 and Interstate 77, and connecting Atlanta, Georgia, and Chattanooga, Tennessee, with Asheville, North Carolina, and Cincinnati and Columbus, Ohio.

Corridors D, E, and H provide east-west connections from Cincinnati through Central West Virginia to the Baltimore-Washington, D.C., metropolitan complex.

3. Corridors J, F, G, and S provide a route extending northerly from Chattanooga, Tenn., to Interstate 75 south of Lexington, Ky., and extending from Interstate 75 north of Knoxville to Charleston, W. Va.

4. Corridors Q, R, and I provide east-west connection from Interstate 81 southwest of Roanoke, Va., to Interstate 64 east of Lexington, Ky.

5. Corridor L provides a north-south connection between Interstate 77 at Beckley, W. Va. and Interstate 79 near Sutton, W. Va.

6. Corridor M provides an east-west route between Interstate 76 near Pittsburgh and Interstate 81 near Harrisburg, Pa.

7. Corridors N, O, P, and U provide a north-south route from Corridor E in Maryland to Interstate 80, and via Interstate 80 to New York City on the east; also connects Williamsport, Pa., with Elmira, N.Y.

8. Corridor T provides an east-west route midway between Interstate 80 in central Pennsylvania and Interstate 90 across New York State, beginning at Erie, Pa., and crossing the southern tier counties to Interstate 81 at Binghamton, N.Y.

As a preface to a discussion of the current position of the highway program, a review of its history would be useful.

In 1965 the Appalachian development highway program was authorized to be accomplished within 6 years—by the end of fiscal year 1971. The 1965 act authorized the construction of not to exceed 2,350 miles of development highways and 1,000 miles of local access roads. For these purposes $840 million was authorized; $35 million of this total was earmarked by the Commission for access road construction. Thus, of the total authorization $805 million was available for application on the development highway system.

Promptly after the passage of the act, the Commission designated a system of corridors complementing the Interstate System and other major routes to provide a regional highway system. These corridors included approximately 2,628 miles, 2,270 miles of which were eligible for construction. The remainder was adequate for projected traffic. The total mileage eligible for construction was necessarily an approximation due to the fact that actual engineering and construction produce some variation in alinement.

In the summer of 1965, the participating States and the Bureau of Public Roads undertook a study to establish adequacy ratings for highway segments

in the designated corridors and cost estimates for upgrading segments eligible for construction within the system to standards justified by traffic projected for 1975.

The results of this study indicated that, at contemporary costs, $2.2 billion would be required to build the mileage authorized. The act authorizes a maximum of 70-percent Federal financing. Thus, the cost estimate study produced a theoretical requirement for a maximum of $1.54 billion in Federal funds, or approximately double the funds authorized. The Commission chose not to request expansion of the authorization by the Congress and in August 1966 voted unanimously to allocate the funds authorized among the participating States on the basis of proportionate mileage on the system and cost estimates. The policy of providing 70-percent Federal participation on engineering, right-of-way, and two-lane construction and 50 percent on four-lane construction was established and the adequacy rating produced in the cost estimate study were adopted for the selection of highway segments to be improved with these funds with provision for adjustment to provide continuity in the system.

In August 1965, under authority of the Kennedy-Javits amendment, a 13-county area in New York was added to the region by unanimous vote of the Commission, and at the request of the State a study of the transportation problems of the area was initiated. Out of this study came the designation of corridors "T" and "U" in New York and Pennsylvania with the condition that major construction would not be undertaken until such time as the Congress authorized additional funds for that purpose.

Subsequently, in the Appalachian Regional Development Act Amendments of 1967, the mileage limits on the development system were raised to 2,700 miles, the ceiling on access roads was increased to 1,600 miles, and the authorization for the highway program was increased from $840 million to $1,015 million (a total of $70 million of which was earmarked for access roads).

With the addition of these corridors which were established as fully eligible for construction by Commission action following the enactment of Public Law 90–103, the total mileage eligible for construction was increased to 2,571. The total mileage of all corridors on the system was increased to 2,962.

The pace of the development highway program has been irregular. During the first year, fiscal year 1966, the rate of obligation was relatively high. A number of projects engineered with State or Federal aid funds prior to passage of the act were placed under construction in the first year. All of the 85.6 miles now open to traffic falls in this category.

In fiscal year 1966, $99 million was obligated on the development highway system of which $75.6 million or 76.3 percent was for construction and $23.4 million or 23.7 percent was for engineering and right-of-way acquisition.

In fiscal year 1967, obligations progressed at a slower rate due to the fact few projects on which engineering had been initiated with other funds remained to be advertised for construction and because engineering initiated with Appalachian funds had not as yet produced construction projects. In fiscal year 1967, $64 million was obligated, $42.9 million or 69.7 percent of which was for construction and $21.1 million or 31.3 percent for engineering and right-of-way acquisition.

Through fiscal year 1967 a total of approximately $163 million was obligated for construction on 256.6 miles and on engineering and/or right-of-way for an additional 980 miles.

While Federal obligations on the development highway program through the end of fiscal year 1967 were low, relative to the funds appropriated, engineering and right-of-way had been initiated on projects which, through the construction phase, will require a total of $883.6 million and $491.5 million in Federal funds. Many of the projects initiated in prior years are being advertised for construction in fiscal year 1968 and the pace of the program is accelerating rapidly. No funds were obligated for construction in the months of October, November, and December 1967, because of a Government-wide deferral of new Federal obligations, but about $17.5 million was obligated in fiscal year 1968 before that.

As of January 1, 1968, a total of about $195 million had been obligated for the Appalachian highway program including both development and local access roads.

It has been the policy of the Commission, following allocation of funds authorized for the development highway program, to allocate appropriated funds on the basis of State capacity to proceed with construction. In fiscal years 1966 and 1967 such allocations were made semiannually. By November 1967, it had become clear that during fiscal year 1968 the collective ability of the States to contract previously approved projects would exceed the funds appropriated. This situa-

tion was made more critical by the enactment of Public Law 90-218 which reduced the Federal funds available for the program. These circumstances necessitated the allocation of appropriated funds over a shorter time period and based on specific estimates by the States of the work to be done. For these reasons, at its November 1967 meeting, the Commission voted to adopt the policy of allocating appropriated funds on a quarterly basis based on identified projects.

TOTAL COST

Mr. EVINS. We indicated earlier that the total authorized highway development for the area is 2,700 miles and 1,600 miles of access roads. What is the total estimated cost of completing the development highways and the access roads?

Mr. FLEMING. You mean to build 2,700 miles?

Mr. EVINS. To build 2,700 miles, which has been authorized, and 1,600 miles access roads?

Mr. FLEMING. The total cost to build the 2,700 miles established as a mileage ceiling is in the neighborhood of $2.75 billion. The highway program has been treated by and large as the authorized funds, the funds being a limitation, rather than mileage.

Mr. EVINS. Congress has authorized so many miles of highways, development roads, and corridor roads to be built in the 13-State area. My question is how much will it cost to build these roads?

Mr. FLEMING. The best estimate for the total cost of 2,700 miles of construction on these designated corridors——

Mr. EVINS. You are not adding 1,600?

Mr. FLEMING. Not access roads.

Mr. EVINS. I am asking overall.

Mr. FLEMING. The access road mileage is hard to estimate because they are very small projects.

Mr. EVINS. They are both hard to estimate.

Mr. FLEMING. The others we have cost estimates on every section.

Mr. EVINS. Give us the cost estimates on the development highways.

Mr. FLEMING. It would be about $2.75 billion total, combination Federal and State.

Mr. EVINS. $2.75 billion would be the cost for development of highways. What is the estimated cost for the 1,600 miles of access roads?

Mr. FLEMING. $160 million. That is based on an average of $100,000 a mile, which is the standard that we have generally adopted.

Mr. EVINS. I think we have arrived at it then. The estimated cost for development highways is $2.75 billion and the estimated cost for 1,600 miles of access roads is $160 million. The total of those two is $2.91 billion.

Mr. FLEMING. That would be the total cost, including State participation.

COMPLETED HIGHWAYS

Mr. EVINS. Mr. Chairman, you have not begun to walk. You are just crawling. You tell me you have only about 85 miles of the highway built.

Mr. FLEMING. That is open to traffic.

Mr. JONAS. Let me see where that is.

Mr. EVINS. Take a look at this chart. Can you point out where this 85 miles is open?

Mr. FLEMING. I can generally. The 26-mile section in Kentucky that

runs from Hazard north toward the mountain parkway, it stops at Quicksand. There is also a section in North Carolina which was the first one completed.

Mr. JONAS. That is where?

Mr. FLEMING. That is near Asheville, on the north side of Asheville.

Mr. EVINS. How many miles?

Mr. FLEMING. There are 6 miles open there and about 5 miles open below Asheville, the Waynesville bypass. In addition to the 26 miles stretching north from Hazard, there is another strip in Kentucky on U.S. 119 near Whitesburg, which totals about 7 miles, a section on U.S. 23 of about 3 miles, this is the Louisa bypass, and about 7 miles on 15 near Whitesburg. There are about 6 miles open in Maryland, west of Hagerstown. Virginia has currently about 10½ miles open on U.S. 460 and 4 miles on U.S. 23 near Wise. West Virginia has almost 7 miles open, which is reconstruction of old Route 50 east of Parkersburg on that corridor headed east from Cincinnati right across into Washington and Baltimore, and about 2 miles on 460 near Princeton. Tennessee has about 8 miles open on corridor J north of Chattanooga.

STATUS OF PLANNING

Mr. EVINS. What is the status of the planning?

Mr. FLEMING. The current situation as of the first of the year, there is underway engineering on all projects of 1,400 miles.

Mr. EVINS. When do you estimate more construction will be let?

Mr. FLEMING. We estimate a great deal of construction is going to be let between now and June 30. The current obligation at the end of January, $210 million. The States have indicated a capacity, and BPR confirms the figures project by project to handle the obligation level up to over $300 million by the end of March, which means it could be due at the rate of $50 million a month in February and March. I frankly think that is a little optimistic.

Mr. EVINS. Somewhere in your justification I read you have worked out a plan where the States can advance some money to accelerate their construction and then be reimbursed by the Commission to allow States that have a particular desire to move ahead.

Mr. FLEMING. To get a precise estimate of what the States could do in the past we have operated by and large on their assertions of what could be done in the road program. To get a harder estimate we took every project that is on the system and has been initiated in some form, applied to it the average time between the initiation of engineering and the initiation of right-of-way and the day it is let for construction; in other words, looked at what is in the pipeline.

On the basis of those estimates, the States could commit $343 million in development funds on the Federal system by the end of fiscal 1968. Now, the obligation limitation that we are working under now gives us $316 million, $27 million less than needed. I should indicate the States estimate they can do more than that. This $343 million is the best estimate we can work out.

HIGHWAY CONSTRUCTION

Mr. JONAS. Mr. Chairman, the red lines on the big map, are they your system of Appalachia roads?

Mr. FLEMING. That is correct.

Mr. JONAS. And is that uniformly along already identifiable roads? How much of it is through virgin territory?

Mr. FLEMING. Virtually every highway follows a corridor, general traffic artery, that is served by some kind of road now, just because the terrain is such that just anywhere that a road could be built somebody has built one.

Mr. JONAS. Some way of access between communities, and you are building roads between community and community.

Mr. FLEMING. Building a much higher standard road is what it gets down to.

Mr. JONAS. You said one or two roads are improvements on U.S. highways.

Mr. FLEMING. By law these highways must be added to the primary system and that is in the statute.

Mr. JONAS. I know. But they become added to what is built.

Mr. FLEMING. That is right. Some of them are existing primary routes.

Mr. JONAS. Some of the roads you are building are on U.S. highways now; others are identified as State highways and others local highways.

Mr. FLEMING. That is correct.

Mr. JONAS. We are a little different than most States. All of our roads are State roads. We have State road maintenance.

Mr. FLEMING. West Virginia has the same system.

Mr. TALCOTT. Your Appalachia region has approved State roads, Henderson-Asheville and up.

Mr. JONAS. Yes, sir; right. Asheville up to what you mentioned is not a part of Interstate. The Interstate System goes to Knoxville but your road goes up to Whitesburg, Ky. That is through Irvine, Tenn.

Mr. FLEMING. That is correct. That is 23.

Mr. JONAS. Was that a U.S. highway?

Mr. FLEMING. That is U.S. 23.

Mr. JONAS. And you are improving that, widening it and upgrading it?

Mr. FLEMING. That is correct. In many cases two lanes to four. But the corridor is designed to provide the best access compatible with local, State, and regional needs. For example, this one I happened to be on recently I remember, corridor H coming east from West Virginia. That corridor follows in its course from Weston east to Strasburg and covers a piece that is on a primary highway, a piece on a State highway, and a piece on what in most States would be a county road.

Mr. JONAS. You do not have identified on this map access roads as proposed.

Mr. FLEMING. No. Most of these are very small projects—industrial parks and that sort of thing. I would be glad to provide for the record a list of those in smaller detail maps. I think in relation to the point you have raised that some of these routes do follow existing primary highways where they are being upgraded. Some of them follow State routes and some of them follow county roads.

Mr. JONAS. Now you have contracts with the States to maintain these roads once they are constructed?

Mr. FLEMING. The State, under title 23 of the United States Code which governs all highway construction, becomes responsible for maintenance. The Public Works Committee wrote in the statute the requirement that these roads go on the primary system as built. That means the States are responsible for maintenance for all of them.

Mr. TALCOTT. So you are not in the maintenance business on any roads.

Mr. FLEMING. No.

ALLOCATION OF FUNDS TO STATES

Mr. JONAS. Actually you do not build any roads. You allocate the funds to State highway commissions.

Mr. FLEMING. The State highway departments do the contracting with the Bureau of Public Roads performing a sort of oversight function.

Mr. JONAS. The same oversight as on primary functions.

Mr. FLEMING. That is correct. On a number of these corridors the States in addition to Appalachian account funds are committing Federal primary assistance as well as substantial State funds.

Mr. JONAS. Even higher than your funds would do?

Mr. FLEMING. They are trying to build the sections which can't be built with this authorization is about what it boils down to. Out of the 2,700 miles that is authorized, the amount of money that is authorized on the current cost estimates would assist in the construction of 1,600 miles. To go beyond that the States are making commitments of State funds and Federal aid primary funds. There will be some sections that will just have to be deferred to live with this authorization.

Mr. JONAS. What is your dim red line? What does it indicate?

Mr. FLEMING. On the exterior—that is just——

Mr. JONAS. Down through the region.

Mr. FLEMING. The dark green lines are the Interstate System.

Mr. JONAS. I see. This is the boundary of the system.

Mr. FLEMING. Under current estimates the States will need to do work now authorized—that is projects authorized, on which engineering has been done, rights-of-ways are underway or completed—$343 million by the end of fiscal 1968. Now on top of that must come access road obligations which will cumulatively total about $20 million by that date. That means $363 million through the year cumulative. The obligation limitation that was imposed by the continuing resolution gives us 316, which means we have approximately $54 million appropriated but not available for obligation until after the end of the fiscal year.

Mr. JONAS. This map would indicate that of all the States in the region, Pennsylvania has more of its territory embraced than any of the others percentagewise.

Mr. FLEMING. Well West Virginia is entirely included.

Mr. JONAS. That is right—the whole State.

Mr. FLEMING. The land area in Pennsylvania is somewhat deceiving though because the northern tier is very sparsely populated. It is about half the population of the State.

Mr. EVINS. Has there been any diversion of funds?

Mr. FLEMING. There has not been, Mr. Chairman. The earlier authorization was for $840 million. Last year the Congress increased that authorization to $1,015 million.

Mr. EVINS. You said earlier about transfers in connection with health centers or trade schools, but are you following that practice with respect to highway development?

Mr. FLEMING. We are trying to put the money where the States can use it.

Mr. EVINS. Once it is allocated, it is tied down for that purpose?

Mr. FLEMING. All authorized funds are allocated firmly. Within the appropriated funds our allocations have been based on capacity to proceed.

Mr. EVINS. Let us take a look at this chart here. The total allocation is $1,015 million. That does not mean the appropriation. This is the total authorized that has been allocated.

Mr. FLEMING. That is correct.

Mr. EVINS. For access roads $4,689,665 for Tennessee has been allocated.

Mr. FLEMING. That is correct.

Mr. EVINS. For development highways $53,213,000. For North Carolina, $3,495,389 has been allocated for access roads and $49,541,000 for development highways. With respect to appropriations, only $100,000 has been appropriated for access roads in North Carolina and $19 million for development highways. In Tennessee, $800,000 of appropriated funds has been allocated for access roads and $20,500,000 for development highways for a total of $21,300,000. Your subtotal for all the 13 States is, access roads $21,500,000, development highways $289 million, for a total of $310,500,000. This is all the money that has been made available to the States.

Mr. FLEMING. That is right. The obligation ceiling through 1968 is $316 million. There is $5,500,000 which will be available for further allocation. The allocations have been made on the capacity of the States to contribute work through March.

Mr. EVINS. Mr. Chairman, there has been a news report that the last 3 months of 1967 freeze has been lifted. That is with respect to the Appalachian highway development program. What is the situation?

Mr. FLEMING. There was a suspension of obligations on the Appalachian highway program and most other activities in the Appalachian Act the last 3 months of the calendar year 1967, October, November, and December. These were effective the first of the year.

Mr. EVINS. So the freeze was on construction and not on right-of-way acquisition and planning.

Mr. FLEMING. That is right.

Mr. EVINS. Now do you think you are geared up to move at a more rapid pace?

Mr. FLEMING. Yes, sir.

HIGHWAY FUNDING AND CONSTRUCTION TABLES

Mr. EVINS. We will place in the record these tables. Also the access road text on pages 6, 7 and 8.

(The documents of the justification follow:)

SUMMARY OF SECTION 201 FUNDING REQUIREMENTS THROUGH MAR. 31, 1968, AS REPORTED BY STATES JAN. 1, 1968 COSTS ($1,000)

State	Funds obligated through Jan. 1, 1968			Funds to be obligated Jan. 1 to Mar. 1, 1968			Funds to be obligated through Mar. 31, 1968		
	Access roads	Development highways	Total	Access roads	Development highways	Total	Access roads	Development highways	Total
Alabama	6,920	----------	6,920	1,622	----------	1,622	8,542	----------	8,542
Georgia	144	5,685	5,829	12	10,235	10,247	156	15,920	16,076
Kentucky	485	40,124	40,609	100	11,378	11,478	585	51,502	52,087
Maryland	----------	11,703	11,703	33	----------	33	33	11,703	11,736
Mississippi	----------	----------	----------	4,000	----------	4,000	4,000	----------	4,000
New York	----------	20,055	20,055	----------	10,870	10,870	----------	30,925	30,925
North Carolina	18	12,783	12,801	20	5,378	5,398	38	18,161	18,199
Ohio	803	9,583	10,386	99	9,675	9,774	902	19,258	20,160
Pennsylvania	370	21,342	21,712	547	14,417	14,964	917	35,759	36,676
South Carolina	1,167	----------	1,167	2,572	----------	2,572	3,739	----------	3,739
Tennessee	112	11,475	11,587	613	8,331	8,944	725	19,806	20,531
Virginia	581	31,914	32,495	105	1,744	1,849	686	33,658	34,344
West Virginia	342	19,164	19,506	78	25,536	25,614	420	44,700	45,120
Total	10,942	183,828	194,770	9,801	97,564	107,365	20,743	281,392	302,135

ALLOCATION OF AUTHORIZED SEC. 201 FUNDS

State	Allocations of total authorized funds [1] (ARC Res. Nos. 140 and 154)			Allocations of appropriated funds through Mar. 31, 1968 (ARC Res. No. 154)			Balance of authorized funds after Mar. 31, 1968 [1]		
	Access roads	Development highways	Total	Access roads	Development highways	Total	Access roads	Development highways	Total
Alabama	15,530,352		15,530,352	8,700,000		8,700,000	6,830,352		6,830,352
Georgia	3,016,524	18,149,000	21,165,524	200,000	16,500,000	16,700,000	2,816,524	1,649,000	4,465,524
Kentucky	3,792,608	190,320,000	194,112,608	600,000	52,500,000	53,100,000	3,192,608	137,820,000	141,012,608
Maryland	1,706,949	48,078,000	49,784,949	100,000	12,000,000	12,100,000	1,606,949	36,078,000	37,684,949
Mississippi	6,059,984		6,059,984	4,000,000		4,000,000	2,059,984		2,059,984
New York	3,010,421	108,800,000	111,810,421		31,500,000	31,500,000	3,010,421	77,000,000	80,310,421
North Carolina	3,495,389	49,541,000	53,036,389	100,000	19,000,000	19,100,000	3,395,389	30,541,000	33,936,389
Ohio	3,705,965	57,246,000	60,951,965	1,000,000	20,000,000	21,000,000	2,705,965	37,246,000	39,951,965
Pennsylvania	10,478,715	110,638,000	121,116,715	1,000,000	36,500,000	37,500,000	9,478,715	74,138,000	83,616,715
South Carolina	6,433,216		6,433,216	3,800,000		3,800,000	2,633,216		2,633,216
Tennessee	4,689,665	53,213,000	57,902,665	800,000	20,500,000	21,300,000	3,889,665	32,713,000	36,602,665
Virginia	2,709,053	42,107,000	44,816,053	700,000	34,500,000	35,200,000	2,009,053	7,607,000	9,616,053
West Virginia	5,371,159	261,908,000	267,279,159	500,000	46,000,000	46,500,000	4,871,159	215,908,000	
Subtotal	70,000,000	940,000,000	1,010,000,000	21,500,000	289,000,000	310,500,000	48,500,000	651,000,000	699,500,000
BPR and miscellaneous		5,000,000	5,000,000		1,000,000	1,000,000		4,000,000	4,000,000
Total	70,000,000	945,000,000	1,015,000,000	21,500,000	290,000,000	311,500,000	48,500,000	655,000,000	703,500,000

[1] Subject to appropriation.

APPALACHIAN DEVELOPMENT HIGHWAYS FUNDING REQUIREMENTS AS REPORTED BY STATES

[In thousands]

	Through fiscal year 1967	Fiscal year 1968	Through 1968	Fiscal year 1969	Through 1969	Fiscal year 1970	Through 1970	Fiscal year 1971	Through 1971
Sec. 201 funds [1]	$163,097	$253,166	$416,263	$225,832	$642,095	$179,777	$821,872	$118,128	$940,000
State matching funds	96,732	234,081	330,813	197,760	528,573	162,041	690,614	118,035	808,649
Total cost	259,829	487,247	747,076	423,592	1,170,668	341,818	1,512,486	236,163	1,784,649

[1] Listing by States in separate table.

ADJUSTED SEC. 201 FUNDING REQUIREMENTS BASED UPON AVERAGE TIME REQUIRED FROM P.E. TO R/W TO CONSTRUCTION FROM CURRENT STATUS OF PROJECTS

[In thousands]

	Through fiscal year 1967	Fiscal year 1968	Through 1968	Fiscal year 1969	Through 1969	Fiscal year 1970	Through 1970	Fiscal year 1971	Through 1971
Georgia	$5,618	$6,503	$12,121	$6,028	$18,149	0	$18,149	0	$18,149
Kentucky	37,501	40,196	77,697	37,252	114,949	$37,685	152,634	$37,686	190,320
Maryland	11,104	6,167	17,271	14,491	31,762	16,316	48,078	0	48,078
New York	14,676	36,776	51,452	26,942	78,394	30,406	108,800	0	108,800
North Carolina	12,645	5,685	18,330	22,449	40,779	8,762	49,541	0	49,541
Ohio	7,696	23,271	30,967	26,279	57,246	0	57,246	0	57,246
Pennsylvania	15,704	9,284	24,988	37,903	62,891	37,000	99,891	10,747	110,638
Tennessee	9,235	17,343	26,578	16,634	43,212	10,001	53,213	0	53,213
Virginia	31,994	10,113	42,107	0	42,107	0	42,107	0	42,107
West Virginia	16,924	24,801	41,725	62,248	103,973	78,968	182,941	78,967	261,908
Total	163,097	180,139	343,236	250,226	593,462	219,138	812,600	127,400	940,000

SUMMARY, SEC. 201 FUNDING REQUIREMENTS USING ADJUSTED AMOUNTS

[In millions]

	Through fiscal year 1967	Fiscal year 1968	Through 1968	Fiscal year 1969	Through 1969	Fiscal year 1970	Through 1970	Fiscal year 1971	Through 1971
Development highways	$163.1	$180.1	$343.2	$250.3	$593.5	$219.1	$812.6	$127.4	$940.0
Access roads	8.3	16.7	25.0	5.0	30.0	20.0	50.0	20.0	70.0
Administration etc	.3	1.5	1.8	1.2	3.0	1.0	4.0	1.0	5.0
Total	[1] 171.7	[2] 198.3	370.0	[3] 256.5	626.5	[3] 240.1	866.6	[3] 148.4	1,015.0
1. Appropriation	[3] 300.0	[3] 70.0	[4] 370.0	[5] 125.0	495.0	[6] 260.0	755.0	[6] 260.0	1,015.0
Balance (+) or (−)	+128.3	----------	[4] [7] −53.3	----------	[7] −131.15	----------	[7] −111.6	----------	0
2. Appropriation	[3] 300.0	[3] 70.0	[4] 370.0	[8] 257.0	627.0	[8] 240.0	876.0	[8] 148.0	1,015.0
Balance (+) or (−)	+128.3	----------	[4] [7] −53.3	----------	+.5	----------	+.4	----------	0

[1] Actual obligations
[2] Estimated obligations.
[3] Actual appropriations.
[4] Obligational authority, $316,700,000 through fiscal year 1968.
[5] Anticipated appropriations.
[6] Recommended uniform appropriations.
[7] Schedule can be attained only with prefinancing contingent upon the state's ability and willingness to advance funds, with implied reimbursement from future appropriations, in addition to required matching funds.
[8] Appropriations required for total funding.

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM—MILEAGE SUMMARY

State	Total corridor	Eligible for construction	Construction assisted with sec. 201 funds (estimated)	Status as of Jan. 1, 1968				
				Location studies completed or underway	Design completed or underway	R/W completed or underway	Construction completed or underway	Construction completed
Georgia	89.0	86.4	37.4	86.4	35.2	15.7	5.3	----
Kentucky	578.9	415.6	342.6	415.6	325.3	145.3	71.4	43.2
Maryland	82.2	78.1	70.1	78.1	69.9	22.7	13.0	5.8
New York	260.0	230.5	147.8	212.3	202.8	37.0	23.7	----
North Carolina	201.2	200.3	147.9	178.5	148.3	51.5	20.5	11.1
Ohio	295.3	202.3	164.2	199.7	128.6	84.1	4.1	----
Pennsylvania	491.1	441.5	170.8	348.0	50.5	39.5	26.4	----
Tennessee	335.2	322.4	158.9	291.8	165.6	55.9	23.1	8.3
Virginia	203.1	178.1	103.0	178.1	97.8	97.8	75.4	10.4
West Virginia	425.8	415.9	320.3	415.9	177.9	61.0	12.5	6.8
Total	2,961.8	2,571.1	1,663.0	2,404.4	1,401.9	610.5	275.4	85.6

Funds which are not obligated according to this schedule will be subject to reallocation in March, along with approximately $4.5 million not allocated in January. It is apparent from this chart and from States' projected construction schedules that very shortly, demand for funds will exceed supply.

To obtain the most accurate estimate possible of the construction schedule for fiscal year 1968 and funds required to support it, all projects on which work has begun were analyzed to establish the average time lapse between the initiation of engineering and the letting of a construction contract (19 months) and between beginning right-of-way acquisition and construction (10 months). These are regional averages. Individual State averages were used to gage the estimated date of contract letting for construction State by State and project by project for the duration of the program. On the basis of this analysis, it is estimated that total Federal obligations could reach $343 million on the development highway system and approximately $20 million on access roads by June 30, 1968, if funds were available. The project schedules prepared early in January and reflected in the foregoing chart bear out this analysis. However, as previously indicated, only $316 million will be available for obligation through the end of the fiscal year.

The Congress has provided for such a situation in the Appalachian Act Amendments of 1967 which authorize advance financing by the States on projects which require funds exceeding Federal appropriations. Such advance financing does not obligate Federal funds but permits reimbursement to the States as Federal funds are available.

Using this device substantial work can be accomplished during fiscal year 1968 beyond that on which direct Federal obligations—$316 million—can be made. It is our hope that the schedule originally anticipated, bringing obligations to approximately $364 million by the end of the year, will be maintained through the use of advanced financing.

A review of the States' financial capacity to prefinance indicates that all States, with the possible exception of West Virginia, have the capacity to move ahead where reimbursement can be anticipated within a relatively short period of time. In West Virginia, where additional State financing is needed, the Governor is seeking a bond issue which will be used primarily on the Appalachian system.

The development highway program is authorized through fiscal year 1971. The policies of the Commission and the budget request are geared to the objective of having all work under contract by June 30, 1971. To do that, the schedule summarized on the following chart will be necessary.

Appropriation of the $125 million requested will bring the total funds appropriated through 4 years of a 6-year construction program to $495 million—less than half of the $1,015 million authorized and which must be provided to do the job envisioned by the Congress in 1965. Projects currently underway on which engineering and/or right-of-way have been done and will be ready for construction in fiscal year 1969 require Federal financing considerably in excess of the budget request. To insure that the budget reflected the minimum Federal contribution consistent with accomplishment of the program, a conscious judgment has been made to place the burden on the State governments of moving beyond appropriation funds, using the prefinancing device which I have described.

The Governors of the Appalachian States and the responsible State highway officials are clearly aware of the need for maximum speed in the construction of the Appalachian Development Highway System because the authorization for the program is limited and, more importantly, because the economic impact can only be realized upon its completion. Further, it can be anticipated that costs will increase (as has been the experience of the highway industry over the past 5 or 6 years) because of general price advances for labor and materials and more expensive construction due to the inclusion of new safety features. Due to the fixed ceiling on the program, any increase in cost can be directly translated to a decrease in the mileage constructed and a lesser impact on the economy of the region. The Appalachian highway program is limited by money rather than mileage and it is false economy to proceed at any thing less than the maximum rate of which the State highway departments are capable.

LOCAL-ACCESS ROAD PROGRAM

As has been previously pointed out, the Congress authorized in the 1965 act, 1,000 miles of local-access roads. The Commission initially earmarked $35 million of the original $840 million highway authorization for this purpose. In the Appa-

lachian Regional Development Act Amendments of 1967, the ceiling on access roads was increased to 1,600 miles, and an additional $35 million was earmarked for their construction (making a total authorization of $70 million.)

By the end of fiscal year 1967, a total of more than $8 million in Federal funds had been obligated. Over 102 miles were under construction and another 55.7 miles had preliminary engineering and right-of-way acquisition underway. As of January 1, 1968, the Appalachian Regional Commission had approved 371 miles of access road projects. Also as of that date, $10.4 million had been obligated with 66 miles completed, 67.7 under construction, and another 85 miles in preliminary engineering and right-of-way.

It is estimated that by the end of fiscal year 1969, $30 million of access road funds will be obligated, leaving $40 million in authorization to complete the 6-year program.

These local-access roads may provide feeder links to development highways or interstate routes. Some are local service routes to industrial parks. Some will exploit the potential of new investments in recreation, particularly State parks, or capitalize on new private investment such as the reservoir now under construction in Appalachian South Carolina by the Duke Power Co. at a total investment of $700 million. Other access roads may be low-cost forest roads designed to further the development and utilization of the region's timber and other natural resources. And some will facilitate school consolidation and provide necessary access to higher education facilities of importance to long-range Appalachian development.

MILEAGE SUMMARY

Mr. FLEMING. The third table in this series is the one that gives the best current view of where we stand on mileage basis relative to development of the system.

Mr. EVINS. The total corridor is 2,961.8 miles for the entire system and eligible for construction is 2,571.1 miles.

Mr. FLEMING. What that means is that those segments are below standard rated to current traffic and the projected traffic that is used for highway planning. That would be the year 1975 on these roads. In other words, of those segments, that number of miles in these corridors need improvement. The construction that can be actually assisted under the funds authorized in the current cost estimates total 1,663 miles.

The last five columns on that chart summarize the status of the entire program as of the first of the year. The first column indicates location studies completed or underway which is designed to establish the firm location of the road. The second is detailed design or actual engineering. That is cumulative total of over 1,400 miles. The third column is the mileage on which rights-of-way have been initiated. I might say they are cumulative as you move to the right.

Each total is included in the one before. In other words, the 610 is included in the 1,401.

And then the construction is now underway or completed on 275 miles and, as we have discussed earlier, a little over 85 miles is open to traffic.

TWO- OR FOUR-LANE ROADS

Mr. EVINS. This is a very good chart.

Mr. Chairman, was it envisioned originally when we passed the 1957 act, that the roads would be two- or four-lane roads?

Mr. FLEMING. It was never established what any given section would be in the statute. These roads were to be designed in accordance with standard State and Bureau of Public Roads procedures in rating roads to the traffic they would have to bear. Once you get to a certain traffic

volume, there is a shift from two- to four-lane roads. The cost estimates and the initial State planning on this system contemplated that approximately 70 percent should be constructed at four lanes based on traffic demands, and the cost estimates that I gave you a few moments ago of $2.75 billion is based on those estimates. Kentucky has stayed mainly with two-lane roads with the exception of some of U.S. 23 going south from the Ohio River. This is primarily because the traffic volumes don't warrant four lanes. The States have generally chosen and have been permitted by the Bureau of Public Roads to stay with the higher-type design where the traffic warrants it and make an effort to finance the additional sections which cannot be financed with this authorization, either the State funds with Federal aid primary, although that is a relatively small amount of money, or looking toward additional Federal financing possibly at the conclusion of the interstate program when the trust fund——

Mr. EVINS. In other words it did not prohibit four lanes. It said it would be justified in each State depending on the traffic volume.

Mr. FLEMING. That is correct, the traffic volume.

I might note that where initial traffic projections don't justify four-lane roads, that is traffic by 1975 does not justify four-lane facilities, but where traffic to 1990 does, the States have been encouraged to buy four lanes of right-of-way in order to get it at a cheaper cost and have it available for future development, which we think is sound economy.

Mr. EVINS. Well, Mr. Chairman, I want to commend you. At the same time, however, there has been a lot of concern that you have not been able to move fast enough with this program. It held out great hopes and great prospects.

Mr. FLEMING. I might indicate that one of the problems is the problem which Mr. Talcott raised earlier—this question of capacity of the institutions to do the job. In the initial case, Virginia and Kentucky moved very quickly to capitalize on the availability of this program, primarily because the highway commissioners in the two States had proceeded to engineer projects with 100 percent State funds anticipating the availability of this program. For that reason obligations and actual construction moved very promptly in those areas. In some other States we have had to sort of build from the ground up at the same time that the interstate program was peaking out on them and has required the States to do some soul searching relative to the capacity of the highway department.

FUNDING OF HIGHWAY CONSTRUCTION

Mr. EVINS. How much are you asking in the appropriations for 1969 for the access road program?

Mr. FLEMING. I believe it is $30 million earmarked for that.

Mr. EVINS. And you are going to need $40 million more after the $30 million is expended?

Mr. FLEMING. That would leave $40 million between the appropriations and the authorized ceiling for $70 million.

Mr. EVINS. Will the $70 million be sufficient to complete the access road program?

Mr. FLEMING. As you know, Mr. Chairman, the access road program is not a closed system. It is contemplated here with development high-

ways that these are individual projects to get specific sites and for industrial or commercial and recreational development. There is probably an almost unlimited demand for this kind of money. In terms of authorization, $70 million will buy an awful lot.

Mr. FLEMING. I should point out that given the appropriation request for fiscal 1969, assuming that is approved, the total through fiscal 1969 would be $495 million for both development highways and access roads, leaving $520 million between that and the authorization to be appropriated in 2 fiscal years, fiscal 1970 and 1971. If the development highway system is to be built at the fund authorization included in the original legislation and confirmed by the Congress last year, the appropriation requests for the next 2 years will be in the neighborhood of $250 million or $260 million at an annual rate. We are working very diligently with the State governments, with the Governors and highway commissioners to make maximum utilization of the present financing provision that was included in the act this last year. It permits a State to move projects through construction, obtain clearances from the Bureau of Public Roads as to engineering standards and the location of the road, and to qualify for reimbursement subject to future appropriations. This device is to be used at the time the need exceeds the funds appropriated. Everything indicates that that point will be reached in April or May of this year relative to 1968 and probably early in the spring next year, that would be the spring of 1969, relative to the total program. In other words we are just not going to have enough money to meet the demands for doing projects that are currently authorized some time in the next 3 months and probably before the end of fiscal 1969, and we have done this in our appropriation request here consciously.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. EVINS. Now back on the record.

Mr. FLEMING. Mr. Chairman, we are going to attempt to get the work done at the maximum pace in which the States are capable of utilizing the present financing provisions authorized in the 1967 amendments.

Mr. EVINS. If they want to have their own bond issues to construct the roads within their State at an accelerated rate, then the Commission is to reimburse them for their costs on an approved formula basis.

Mr. FLEMING. As funds are appropriated.

REIMBURSEMENT TO THE BUREAU OF PUBLIC ROADS

Mr. EVINS. All right. You show total personnel compensation for 1969 of $535,000 and then you state——

Mr. FLEMING. This is in relation to the highway program. This is the administration charged against this fund by the Bureau of Public Roads. The personnel summary is the next page. They have approximately 36 people working on this in the national office and regional office of BPR.

Mr. EVINS. There are 36 employees in the Development Highway System. Are these both State and Federal?

Mr. FLEMING. No. That is strictly in the Bureau of Public Roads.

Mr. EVINS. The funds carried in your budget are for the reimbursement of the Bureau of Public Roads for these 36 employees.

Mr. FLEMING. That is right. They are carried as administrative compensation for the total program.

Mr. EVINS. All the State employees are paid by the State governments.

Mr. FLEMING. Yes, the State employees are all paid by the State governments.

Mr. EVINS. Do they all work on the State level or do some of them work here?

Mr. FLEMING. In the road program they are all in the State highway departments.

Mr. EVINS. How many of your own employees are working on the highway system?

Mr. FLEMING. We don't have a highway section.

We have several—I would imagine that probably five or six of our professional staff spend some time on the road program, either in planning or in administration. Not full time.

Mr. EVINS. You do not break your own employees down by section?

Mr. FLEMING. No. It seems to me I spend a disproportionate amount of my own time on the highway program.

Mr. EVINS. The only ones you can identify full time on the highway development program are these 36 with the Bureau of Public Roads.

Mr. FLEMING. That is correct. They are totally responsible for the 201 program. Most of those are located in the division or regional offices in the Bureau of Public Roads.

SECTION 202—HEALTH PROGRAM

Mr. EVINS. Let us turn to section 202; $25 million is requested for grants for planning, construction, and operation of multicounty demonstration health projects authorized by section 202. This new obligational authority coupled with $4.769 million carried over will provide an effective program level of $29.769 million for 1969.

You are asking for $29,769,000 for the 202 health program. Is that correct?

Mr. FLEMING. That is correct.

Mr. EVINS. You are requesting $25 million plus a carryover.

Mr. FLEMING. Yes.

Mr. JONAS. Will you tell us how much is unexpended?

Mr. FLEMING. Virtually all of it.

Mr. JONAS. You have spent very little on this actually.

Mr. FLEMING. Virtually none. This program is the one that we had considerable discussion about in December.

MORGANTON PROJECT

Mr. JONAS. What about the Morganton project? Is it moving?

Mr. FLEMING. The current report I have on the Morganton project is that the Hill-Burton agency in the State has reserved $1,572,000 for commitment on the project. Hill-Burton normally approves projects in a four-stage process, and they were up to the last stage which would involve final commitment based on architectural drawings. To

convert the project to one with more regional significance with an outpatient clinic with additional facilities for referral patients from other counties, there has been some change in the design. This is now proceeding and funds are available for commitment as soon as the architectural work is completed. They are going to request, as I understand it, approximately $3 million out of this fund to complement the Hill-Burton money.

Mr. JONAS. And that money is neither obligated nor committed.

Mr. FLEMING. That is correct.

Mr. JONAS. But it is being held on the back burner in reserve, mental reservation.

Mr. FLEMING. Well, we anticipate an obligation will be made on this some time this spring and the sooner the better. Our staff has been working with the Hill-Burton agency and with the Public Health Service and with local applicants to try to move that as quickly as possible.

Mr. JONAS. Well, local people have been disappointed because they have had their money available and they run into roadblocks everywhere they turn.

Mr. FLEMING. Well, we are prepared to go. As this text indicates, in November the Commission designated seven of these demonstration areas based on proposals from the States. The delay in implementation of the program is partially because of its unique character and partially because we consciously did not make obligations until changes could be made in the statute this last year. The new law did not take effect until the middle of October. We have expedited consideration of these applications and made planning and administration grants in three areas. The total obligation there is about $600,000.

A meeting was held a week ago yesterday here in Washington with all of the project area coordinators—the doers—the people who are putting these programs together. The results of the discussions there and the requests identified by project are summarized in the chart included at the end of this presentation on 202 headed "Anticipated Request for '202' Funds." This shows a total for fiscal 1968 of slightly in excess of $36 million. Now, I should voice the caveat that that also is everything they would like to do and can do consistent with the overall proposals that have been submitted. Some of those projects will probably wash out for technical reasons or because they don't fit their program consistently enough. But that is the present anticipated request for money in fiscal 1968.

STATE REQUESTS

Mr. EVINS. Well, your table on this unnumbered page at the end of section 202 shows requests of $38,362,900, but you are only asking for $25 million in new appropriations.

Mr. FLEMING. That is correct.

Mr. EVINS. About 10 of the 13 States are participating.

Mr. FLEMING. There are proposals at present in existence from Tennessee as indicated on here which have not been formally approved.

Mr. EVINS. All of the States are not participating. Those participating are requesting $38,362,900 and you are asking for an appropriation of $25 million plus the carry over.

Mr. FLEMING. That is correct. We think the $25 million is what can be spent consistent with sound planning and sound administration. That would be a total cumulative period of——

Mr. EVINS. In certain areas the Advisory Committee found 60 physicians for every 100,000 people as compared to a national average of 140, and 16 dentists per 100,000 population as against the national average of 54. In one county the report showed—these are some facts—among infants less than 1 year old, the most dominant diseases were: disorders of the ear, 1 out of 3; respiratory tract, 1 out of 3; heart and circulatory system, 1 out of 4; blood diseases, 1 out of 4. Among children ages 2 through 12, heart and circulatory system, 1 out of 3, and so forth.

Mr. FLEMING. I am not sure that this is the point where perhaps this issue should be raised, but I think of it so I will put it in here. In relation to Mr. Jonas' question regarding how much could be obligated consistent with sound planning, I think the 3-year period is where we are going to show big jumps in obligation over this fiscal year 1968 will be in the highway program, in this program right here which will be initiated for the first time and in the supplemental grant program where we are, in effect, catching up with ourselves. A lot of commitments on 1967 projects were made in July and August.

Mr. EVINS. What about your vocational education? Is that one of your more active programs?

Mr. FLEMING. It is.

It has moved very quickly and funds have been obligated during the fiscal years during which they have been appropriated, the 2 years we have had experience with it, and it has stimulated a great deal of activity in the State vocational programs.

Mr. EVINS. Vocational education, highways, health, and supplemental grants are the largest programs for next year.

Mr. FLEMING. They are also the ones that show the greatest increase over obligations in 1967.

JUSTIFICATION MATERIAL

Mr. EVINS. Let us place in the record all of this text on 202 including the chart at the back.

(The justification follows:)

REGIONAL DEMONSTRATION HEALTH PROGRAM, SEC. 202

Authorization	Public Law 89-4		Public Law 90-103	
	$69,000,000		$50,000,000	
	1965-66	1967	1968	1969
Appropriation	$21,000,000	$2,500,000	$1,400,000	[1] $25,000,000
Obligation	117,000	14,000	[2] 20,000,000	[2] 29,769,000

[1] Request.
[2] Estimate.

The sum of $25 million is requested for grants for planning, construction, and operation of multicounty demonstration health projects authorized by section 202 in fiscal year 1969. This new obligational authority coupled with $4.769 million carried over into fiscal year 1969 under Public Law 90-218 will provide an effective program level of $29.769 million in fiscal year 1969.

This program was authorized in recognition of relatively low levels of health services in many areas of Appalachia and because adequate health facilities and services are fundmental to the attraction of private investment. The 202 program provides for grants to be made by the Public Health Service, and was designed to demonstrate improved techniques for the delivery of health services to selected areas. To carry out an evaluation of Appalachian health needs, develop program objectives and recommend criteria for project preparation and selection, the Appalachian Regional Commission established a Health Advisory Committee, composed of experts in the health fields. Findings of the committee, published in March 1966, presented a disturbing picture of high disease incidence and a distinctly inadequate supply of health manpower of all types and levels, and insufficient health facilities and services.

In certain areas, the committee found only 60 physicians for every 100,000 people against the national average of 140 and again in certain areas, only 16 dentists per 100,000 population against the national average of 54.

Death rates from cardiovascular diseases and tuberculosis are high, and infant mortality is also alarmingly high in some of the poorer counties.

The committee's report contained findings from a 5-month health study in one Appalachian county. Among infants less than 1 year, the most dominant disease frequencies were: disorders of the ear, one out of three; respiratory tract, one out of three; heart and circulatory system, one out of four; and blood diseases, one out of four. Among children ages 2 through 12: heart and circulatory system, one out of three; ear, one out of three; and eye, one out of four. Among adults: eye, 42 percent; heart and circulatory system, 27 percent; ear, 26 percent; and allergic, endocrine and metabolic disorders, 23 percent.

Since the committee's report, there have been developed more data indicating the extraordinary severity of Appalachian health needs. One 14-county study in eastern Kentucky, for example, revealed a 50-percent incidence of worms among the men, women, and children examined.

On the basis of its findings, the health advisory committee recommended, and the Commission adopted, criteria and guidelines for the development of 202 projects aimed at providing comprehensive health services for all residents of a project's service area. The committee emphasized three major concepts: regional service, comprehensive care, and demonstration of new health service techniques. Projects include health education, personal preventive services, diagnostic and therapeutic services, rehabilitative services, communitywide environmental health services, and provision for continuing care of persons to encourage the development of a continuing relationship between a patient, his physician, and other health service personnel.

The advisory committee recommended legislative changes to permit the achievement of these objectives. By the Appalachian Act Amendments of 1967, these recommended changes were written into law. The amendments provide that funds may be used for planning and evaluating projects, for the training of medical personnel, and for construction. Funds are authorized for the acquisition of facilities where this is necessary, to provide an integrated system of health services. Public Law 90–103 also amended the act to permit an operating grant for an existing hospital or other health facility which is a component of a multicounty demonstration health project, which is in keeping with the philosophy of providing comprehensive health service in a project area rather than simply building and operating a single facility. Public Law 90–103 contains language to confirm that construction costs can be funded from section 202 funds, or from a combination of 202 grants and grants from other programs such as the Hill-Burton program and the mental retardation facilities and community mental health programs. Grants for operations may cover up to 100 percent of costs for the first 2 years of operation, and up to 50 percent for the following 3 years of operation.

These changes became law on October 11, 1967. Project proposals had been developed and submitted to the Commission on the assumption the legislation would

be amended, and on November 29, 1967, seven demonstration areas were designated. They included eight counties in Georgia; 11 in Kentucky; four in North Carolina; seven in Ohio; six in South Carolina; nine in West Virginia, and seven in Virginia. Other proposals are in preparation. Alabama presently is revising its application. A proposal for the first interstate project has been submitted by Tennessee and Georgia.

Following are some of the specific component projects the seven designated areas plan to include in their comprehensive programs:

Satellite out-patient centers to provide health services to persons in remote areas;

Special transportation systems, to move seriously sick and injured quickly from remote areas to hospitals;

Home health services;

Rehabilitation centers;

Extended care facilities;

Health manpower training programs;

Speech and hearing clinics;

Mental health and mental retardation centers;

Hospital construction;

Development of a system for the common management of medical records and health data throughout an entire demonstration area;

Family planning services;

Prenatal care services.

There is no pattern among the States for the management of the projects. In Virginia the State department of health is the applicant agency. In West Virginia, the acting project director is a physician who has practiced in Princeton for many years. In Ohio and some other areas, a nonprofit organization has been established to run the program, with a hospital administrator as project director.

Because of the unique and often unprecedented character of the projects, it was realized last year that most areas would require funds to carry forth the detailed planning of their proposals. The 1967 amendments to the act provided for this and as of February 1, 1968, planning grants of $200,000 each were made for projects in West Virginia, North Carolina, and Ohio. Proposals for similar grants have been submitted by Virginia, South Carolina, and Georgia.

On the advice of the Health Advisory Committee, the Commission has recently appointed a health project review panel to carry out detailed assessments of proposals for both comprehensive demonstration projects and the component activities. The panel is made up of outstanding representatives of the fields of medicine, public health, hospital planning, hospital administration, nursing education, the social sciences, and other fields. This is the standard practice of the Public Health Service which will also participate in these evaluations.

The effects of the "202" program, both at the local and interstate levels, will be continually and carefully assessed by the Commission with respect to the potential value of comprehensive health programs to the entire Nation. At the time of the passage of the act, section 202 constituted an entirely new concept in Federal health programming. It was followed shortly by Public Law 89-239 (regional medical programs) and Public Law 89-149 (comprehensive health planning). All three programs are in their early development, with little or no precedent to follow, but with the promise of providing a new level of health to the American people through Federal-State-local cooperative efforts.

In the case of Appalachia, the health program is aimed at more than simply raising the health level. Its purpose is to halt the human erosion caused by disease and lack of health care and to strengthen and develop the human resources so that Appalachia can become a more prosperous and more productive region.

FISCAL YEAR 1969

Fiscal year 1969 will be the first year of full-scale operations of the "202" program, and initial plans are being completed for the establishment of urgently needed facilities. In the start-up period of this program, emphasis was placed on those projects which could most readily assure essential health services. In fiscal year 1968 training programs started to develop the supply of auxiliary health personnel to staff facilities and in a number of projects arrangements were made with state schools of medicine so that professional personnel would become available to augment the limited number of physicians in the project areas.

The section 202 program is, by design, competitive. Those States which have

submitted proposals recognize there are limited funds available to carry out their projects. Indeed, the total funds appropriated through fiscal year 1968 for section 202 represents less than one-seventh of the section 202 requests for comprehensive health demonstrations. Therefore, in fiscal year 1969 the organizations involved in the demonstrations will improve their proposals for individual components and will accelerate their areawide development and planning in order to generate projects capable of receiving Appalachian Regional Commission approval. Each 202 proposal has some 40 to 50 components, ranging from the development of home health care services to transportation and communications systems and multi-county diagnostic and treatment centers. This gives some measure of the extent of each 202 demonstration.

Additional proposals are being developed in Alabama, Tennessee, and Mississippi. Some funds may be devoted to planning and initial projects in these areas in fiscal year 1969 if the proposals receive Commission approval.

Following is a summary of the proposed program in the designated demonstration areas including an estimate of the funds required in fiscal year 1969. While not yet eligible for funds, the Alabama and Tennessee proposals are included to give the committee the best possible view of the program. Final commitments will, of course, vary from the estimates as components are refined to the application stage.

ALABAMA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$995,000	$1,640,000	$2,635,000
202 funds	1,810,000	6,560,000	8,370,000
Total	2,805,000	8,200,000	11,005,000
Requested funds, 1968	884,200	3,750,000	4,634,200
Anticipated requests for funds, 1969	950,000	4,050,000	5,000,000

Area	*Population*
3 counties: Limestone, Lawrence, Morgan	121,500

This proposal provides for a full-time staff to continue project development and to provide the demonstration area with a close link to the University of Alabama in Birmingham through its medical center. A regional health complex is envisioned in this proposal along with a coordinated system of area colleges and trade schools to provide training for health workers and continuing training for those already in the health field. "Unless additional health manpower can be trained for the tri-counties," the proposal states, "no solutions designed to supplement existing health resources can be implemented. Progressive patient care, dental care, extended care and public health services are among the programs indicated for later development.

Modification of inpatient facilities to progressive patient care usage, operation of health personnel training programs and services, and construction of dental facilities will require additional support in fiscal year 1969.

GEORGIA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$14,620,475	$6,190,586	$20,811,061
202 funds	8,883,188	2,995,244	11,878,432
Total	23,503,663	9,185,830	32,684,043
Requested funds, 1968	2,036,300	262,300	2,298,600
Anticipated requests for funds, 1969	2,319,100	1,173,400	3,492,500

Area	*Population*
Bartow, Chattooga, Cherokee, Fannin, Floyd, Gilmer, Gordon, Murray, Pickens, Whitfield	270,000

The commitment of the Georgia Department of Public Health, which is responsible for a broad range of health activities, including mental health, mental retardation and comprehensive health planning, strengthens this project. With

this assistance, local communities have studied existing gaps in health care and have attempted to structure programs to fill these gaps. Innovative features include a new approach to mental health through a "mental health learning center" and a "neighborhood health-learning center" to develop new techniques for health education.

KENTUCKY

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$42,528,000	$45,555,750	$88,083,750
202 funds	23,076,622	27,435,000	50,511,622
Total	65,604,622	72,990,750	138,595,372
Requested funds, 1968	1,595,000	4,534,000	6,029,000
Anticipated requests for funds, 1969	4,000,000	5,588,000	9,588,000

Area	*Population*
11 Counties: Bell, Breathitt, Clay, Harlan, Knott, Knox, Laurel, Leslie, Letcher, Perry, Whitley	250,000

This 11-county area in the coal mining region of eastern Kentucky is subdivided into three medical service areas. A large number of local citizens have participated in the planning of this project which also intimately involves the University of Kentucky Medical Center.

Anticipated construction during the first year includes the upgrading of existing acute hospital beds, the addition of extended care and psychiatric units to existing hospitals and the construction of one long-term hospital facility. Among the proposed health services are home care programs, mental health and retardation services, health screening, and environmental health services. A unique training program is designed to bring senior medical students to the project area under the direction of community health field professors from the University of Kentucky School of Medicine, an innovative demonstration aimed at increasing the supply of rural physicians.

Financing of health services including extended care, preventive and restorative services, and emergency care, as well as modernization of substandard facilities will be priority projects.

NORTH CAROLINA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds		$5,293,222	$5,293,222
202 funds	$9,041,989	5,958,614	15,000,603
Total	9,041,989	11,251,836	20,293,825
Requested funds, 1968	1,046,700	3,047,500	4,094,200
Anticipated requests for funds, 1969	695,400	1,209,100	1,904,500

Area	*Population*
Alexander, Burke, Caldwell, McDowell	144,600

North Carolina's proposal focuses on creation of a modern health facility, training of nurses and other paramedical personnel and expansion of public health and welfare services.

In the immediate future, a new Grace Hospital will be built with an initial capacity of 160 beds, with the capacity to be expanded to 330 beds. It is proposed that the old hospital be renovated into a 100-bed extended care facility. Hill-Burton funds are anticipated for these projects, and processing of these applications is now underway.

Construction of a paramedical training facility and a hearing testing center and operating funds for services and health manpower training programs are priority projects.

OHIO

7-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$8,432,405	$12,239,999	$20,672,404
202 funds	6,500,136	14,745,612	21,245,748
Total	14,932,541	26,985,611	41,918,152
Requested funds, 1968	681,500	7,263,000	7,944,500
Anticipated requests for funds, 1969	1,640,000	2,825,000	4,465,000

Area	*Population*
7 Counties: Athens, Vinton, Gallia, Jackson, Lawrence, Meigs, Hocking	210,322

The Ohio project anticipates the construction of two major hospitals. One, the Holzer Medical Center, effects the merger of two group practices. Other proposed construction includes public health units in Jackson and Gallia Counties and a vocational rehabilitation center and mental health center in Athens. Among the projected service programs are a mental retardation mobile evaluation unit, an emergency transportation service and family planning and home care programs. Both nursing education and paramedical training programs are included in the manpower development component.

SOUTH CAROLINA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$5,572,000	$7,584,000	$13,156,000
202 funds	5,581,000	10,634,000	16,215,000
Total	11,153,000	18,218,000	29,371,000
Requested funds, 1968	1,746,600	1,200,000	2,946,600
Anticipated requests for funds, 1969	1,677,000	2,137,000	3,814,000

Area	*Population*
6 counties: Anderson, Cherokee, Greenville, Oconee, Pickens, Spartanburg	650,000

There is an active widely representative health council in the proposed demonstration area and considerable energy has gone into laying the foundation for a 202 proposal. A planning grant will permit more rapid development of essential components, including rehabilitation facilities of regionwide impact, and health manpower training programs.

High-priority projects are two satellite diagnostic and treatment centers and programs in dental and mental health.

TENNESSEE-GEORGIA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds			
202			
Total			
Requested funds, 1968			
Anticipated requests for funds, 1969	$500,000	$1,000,000	$1,500,000

Area	*Population*
6 counties: Georgia: Catoosa, Dade, Walker; Tennessee: Hamilton, Marion, Sequatchie	[1] 339,900

[1] Established 1965.

This project covers three counties in Tennessee and three adjoining counties in Georgia. It is the first 202 project which is interstate. Total projects costs, includ-

ing 202 requirements, are not now available. However, a survey of the area's needs indicates early utilization of $1.500 million for this demonstration for planning, administration and project development, as well as construction and operating funds for expanded public health services, bed modernization, and facilities for mental retardation programs.

VIRGINIA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds	$24,500,000	$1,200,600	$25,700,000
202 funds	17,434,500	4,802,400	22,236,900
Total	41,934,000	6,003,000	47,937,500
Requested funds, 1968	1,220,100	1,312,000	2,532,100
Anticipated requests for funds, 1969	1,998,900	0	1,998,900

Area: *Population*

7 counties: Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, Wise, and the independent city of Norton 223,200

The primary concern of this project to be operated as a separate unit of the State health department will be to seek out patients and get them into a system with an emphasis on continuity of medical care. This will be accomplished by establishing and operating a network of regionalized clinical services. A regional specialty clinic will be established in Wise County which will also include a mental health unit, poison control center, rehabilitation conseling service, and a continuing education program. The satellite, or outlying clinics will be located in the surrounding counties and will afford referral flow of patients from the smaller clinics to the regional clinic as well as a flow of physician consultation services from the regional clinic to the outlying clinics. There are plans to establish and operate a railroad medical unit, which will be moved from one community to another and left on railroad sidetrack for a limited period of time and equipped to do multiphasic screening of patients. Patients with health problems would be referred from the railroad medical unit into the mainstream of clinical services.

In conjunction with the system of regionalized clinic services, arrangements will be made to establish paramedical personnel training to purchase hospitalization at local facilities to provide transportation of patients and to arrange payment for home health services through existing health agencies.

WEST VIRGINIA

5-year proposal	Administration and operation	Construction	Total
Other Federal, State, and local funds		$7,398,416	$7,398,416
202 funds	$17,556,849	8,621,464	26,178,313
Total	17,556,849	16,019,880	33,576,729
Requested funds 1968	2,300,000	3,820,000	6,120,000
Anticipated requests for funds 1969	2,600,000	4,000,000	6,600,000

Area *Population*

9 counties: Fayette, Logan, McDowell, Mercer, Mingo, Monroe, Raleigh, Summers, Wyoming 442,500

This nine-county area, located in the heart of Appalachia, encompasses the three medical service areas of Princeton-Bluefield, Beckley-Mount Hope, and Williamson-Logan.

The objectives of this project are to develop and implement a comprehensive plan demonstrating innovative methods in delivery of health services and in the construction of medical facilities. The seven major components—public health, dental health, extended care, manpower and training, medical services, transportation and communication, and mental health—are interrelated to meet the area's health needs.

Included in the construction program are public health centers in Logan, Mercer, and Raleigh Counties with additional satellite centers in the other six counties (and of three regional mental health centers in Mercer, Raleigh, and Logan Counties). The manpower and training program is to be implemented at local community colleges. In addition, programs in dental health, medical services, and transportation and communication have been designed to meet the unique needs of this largely rural area.

ANTICIPATED REQUEST FOR "202" FUNDS

FISCAL YEAR 1968

	Administration and operation	Construction	Total
Alabama	$884,200	$3,750,000	$4,634,200
Georgia	2,036,300	262,300	2,298,600
Kentucky	1,495,000	4,534,000	6,029,000
North Carolina	1,046,700	3,047,500	4,094,200
Ohio	681,500	7,263,000	7,944,500
South Carolina	1,746,600	1,200,000	2,946,600
Virginia	1,220,100	1,312,000	2,532,100
West Virginia	2,300,000	3,820,000	6,120,000
Total	11,410,400	25,188,800	36,599,200

FISCAL YEAR 1969

Alabama	950,000	4,050,000	5,000,000
Georgia	2,319,100	1,173,400	3,492,500
Kentucky	4,000,000	5,588,000	9,588,000
North Carolina	695,400	1,209,100	1,904,500
Ohio	1,640,000	2,825,000	4,465,000
South Carolina	1,677,000	2,137,000	3,814,000
Tennessee-Georgia	500,000	1,000,000	1,500,000
Virginia	1,998,900		1,938,900
West Virginia	2,600,000	4,000,000	6,600,000
Total	16,380,400	21,982,500	38,362,900

Note: The "202" funds required to accomplish the preceding can be scheduled as follows: $36,600,000 in 1968, an $38,400,000 in 1969. This reflects a pace the demonstration health area directors and planners have set out as feasible and in keeping with sound planning and development practices. Obviously, all cannot be accomplished at once. It is the best judgment of the Commission that the ensuing competition for "202" funds will cause the best projects to be supported first. Given the present "202" schedule, a request for $25,000,000 is justified.

Section 203—Land Stabilization

Mr. Evins. The next program is land stabilization. This is section 203. You are asking for $3 million. Is there any carryover in this program?

Mr. Fleming. No. We anticipate total obligations by the end of the year 1968.

Mr. Evins. The chart shown on page 3, showing the States, estimates the total will be $2,710,000, and administrative costs will be $290,000 for a grand total of $3 million. There are no carryovers in this fund.

Mr. Fleming. That is correct. These funds are used for contracts with individual landholders relative to land stabilization plans on a project basis.

Relation to Department of Agriculture Program

Mr. Jonas. Mr. Chairman, how do these differ from the normal land stabilization program handled by the Department of Agriculture?

Mr. Fleming. They differ in two ways essentially. One is that they may be programed for a longer term. This program authorizes up to

10-year contracts to be executed by the Secretary of Agriculture with individual landholders providing 80 percent of cost, which can be done under the ACP program but it is done on an annual contract basis. The second thing is by Commission policy these funds are not allocated by county throughout the region as are ACP funds and are not used as an agricultural production device but generally for erosion control and land stabilization. Each of the States develops a plan for the use of these funds focusing on complementing other kinds of investments—for example, reservoirs, small watershed projects, municipal water supply projects where there are siltation problems.

Mr. JONAS. Where does John Smith who lives in X County go if he wants to get in on this program? To the county ASCS office?

Mr. FLEMING. The county ASCS office ultimately administers the contract. In the first instance the State will make the decision it wants to have a project in county X to help protect the water supply in the county if it is clogging up with silt, and the county office is in contact with the landholders.

Mr. EVINS. Who administers this?

Mr. FLEMING. It is administered through the county ASCS office. The State's involvement comes in determining the area eligible to participate and establishing the project.

ROLE OF ASCS OFFICE

Mr. EVINS. Will a farmer go to the ASCS office or State agricultural office?

Mr. FLEMING. The farmer would go to the ASCS office.

Mr. JONAS. And they will tell him what to do.

Mr. FLEMING. That is correct.

Mr. JONAS. Is this program designed to help the individual farmer on an individual farm or do you say it is designed more on a sort of a regional or sectional basis?

Mr. FLEMING. During the first 2 years of the program it has been used largely to help the farmer on the farm, with some modification of that. For example, in the two States that have done the best with this program, Kentucky and Tennessee, have focused on a project area in trying to relate the contracts that are being let to an area plan.

Mr. JONAS. If it was designed simply to help an individual farmer, it would be merely an extension of the ASCS program, would it not?

Mr. FLEMING. That is true.

Mr. JONAS. To provide supplemental funds.

Mr. EVINS. Mr. Chairman, could you give us the figures as to how many projects have been initiated in the last 2 years?

Mr. FLEMING. I will be glad to supply for the record the number of contracts per State.

Mr. JONAS. And show the average amount per farm.

Mr. FLEMING. One of the best examples where this has been done on a project basis is in relation to Cookeville, Tenn., where they have concentrated these funds in contracts to landholders to cut down on erosion and siltation that was threatening the public water supply.

Mr. EVINS. That is related to the local development district program.

Mr. FLEMING. This is being used as a companion effort to that. That is true.

STATES—NUMBER OF PROJECTS AND ACREAGE COST

Mr. EVINS. Give us a table showing us the States and the number of projects and the average cost.

(The information follows:)

CONTRACTS UNDER SEC. 203

State and year	Contracts approved	Total acreage	Acre per contract	Dollars per contract	Dollars per acre
Alabama:					
1966	1,011	22,172	22	875	38.97
1967	393	9,344	23	1,080	45.46
Georgia:					
1966	332	7,526	24	950	40.15
1967	180	3,946	21	895	40.85
Kentucky:					
1966	586	14,206	26	1,188	46.50
1967	209	5,935	28	1,556	54.82
Maryland:					
1966	57	2,051	37	1,608	43.02
1967	21	891	42	2,303	54.30
New York:					
1966	343	13,247	40	1,713	43.10
1967	136	6,108	44	2,214	49.32
North Carolina:					
1966	1,508	14,266	10	315	33.05
1967	948	9,758	10	217	21.08
Ohio:					
1966	298	12,499	42	1,416	34.06
1967	97	2,935	30	1,699	56.16
Pennsylvania:					
1966	457	15,818	36	1,784	49.46
1967	147	6,583	44	2,262	50.52
South Carolina:					
1966	134	3,369	24	645	26.34
1967	154	3,826	24	653	26.32
Tennessee:					
1966	1,411	21,583	16	624	40.20
1967					
Virginia:					
1966	433	12,931	30	808	27.29
1967	194	5,954	30	930	30.32
West Virginia:					
1966	534	21,088	39	1,106	28.02
1967	219	8,436	39	1,264	32.83

LAND STABILIZATION JUSTIFICATION

Mr. EVINS. Insert pages 1 through 4 of this section in the record.

(The pages follow:)

LAND STABILIZATION PROGRAM, SEC. 203

	Public Law 89-4		Public Law 90-103	
Authorization	$17,000,000		$19,000,000	
	1965-66	1967	1968	1969
Appropriation	$7,000,000	$3,000,000	$3,290,000	[1] $3,000,000
Obligation	6,640,000	3,360,000	[2] 3,290,000	[2] 3,000,000

[1] Request.
[2] Estimate.

Three million dollars is requested for fiscal year 1969 for land stabilization, conservation, and erosion control carried out by the Department of Agriculture. Section 203 authorizes the Secretary of Agriculture to enter into contracts of 3- to 10-year duration with landholders for conservation practices. These practices are accomplished with Federal cost sharing not to exceed 80 percent of cost. The program is administered through the Agricultural Stabilization and Conservation Service with the technical assistance of the Soil Conservation Service.

While the administrative structure of the program is patterned on the Agriculture Conservation Program, its focus is somewhat different. The Appalachian Regional Commission, by Resolutions 47 and 138, established criteria for the use of this program. Normal ACP assistance is available on a "first-come" "first-serve" basis and is available throughout counties. Under section 203, the Appalachian Commission hopes through planning to define specific program areas and apply land stabilization practices to prevent erosion, siltation and encourage desirable land use conversion. In addition, the Commission stresses high value, long-term contracts as opposed to annual cost-sharing in small dollar amounts.

To accomplish this the Appalachian Commission has been attempting to break new ground in the use of land treatment measures by requiring States to prepare investment plans for expenditures of funds. These plans must be developed to show how 203 funds will be utilized to overcome adverse physical conditions which are contributing to sluggish economic development.

These plans have been developed by committees made up of representatives from the States' Soil Conservation Committees, Farmers Home Administration, and other appropriate agencies. Because the directive in the Act that funds should be invested in areas with potential for growth, these State plans have limited the areas eligible for section 203 contract assistance. In fiscal year 1966, the first year of the program, 138 counties out of 373 counties in the region were included in the program. In fiscal year 1967 the number of areas was reduced to 111, primarily because of a smaller appropriation and more concentration in use of funds. Because of the history of the Agriculture Conservation Program, to which 203 funds are closely related, most of the initial State plans established eligibility by county.

The Commission, however, has now designated criteria to focus the program more sharply on project areas addressed to the areas identified in an approved State Appalachian development plan as having a significant potential for future growth; or assure that projects to be assisted will complement investments in the area to be served or otherwise have a demonstrable impact on the solution of problems or the development of potential of the area to be served as specified in the approved State Appalachian development plan, such as (1) protection of a water supply by reducing erosion and siltation; (2) development of recreation areas; (3) complement Public Law 566 projects which add to potential for development; or (4) protect other significant public investments such as Corps of Engineer Reservoirs, National Parks or Forests, et cetera, where the project area has a demonstrable bearing on development.

Several States have developed project areas which will require multiyear appropriations to see successful accomplishment of objectives. For example, the State of Kentucky requires over $1.5 million to complete 27 projects designed to reduce siltation of municipal water supplies and flooding. Another example is in the State of Tennessee where a three-county area in the Cookeville growth area is earmarked to receive over $1 million in 203 funds over several years. These 203 funds will be used in conjunction with a major watershed project under Public Law 566 eventually involving three impoundments. Such concentration will assure the greatest return on the Federal investment.

The rate of obligation of section 203 funds is high, as indicated by the following table of obligations. Also included are estimated obligations for fiscal year 1968 and fiscal year 1969.

SEC. 203—FISCAL YEARS 1966, 1967, 1968, AND 1969: OBLIGATIONS AND ESTIMATES

State	Obligations			
	Actual		Estimated	
	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Alabama	$841,865	$486,775	$398,130	$359,644
Georgia	308,787	166,644	138,600	125,202
Kentucky	664,529	402,406	317,610	286,908
Maryland	91,685	45,000	39,870	36,016
Mississippi	0	0	253,920	229,374
New York	558,923	310,899	259,650	234,551
North Carolina	463,371	261,355	207,720	187,640
Ohio	413,666	225,037	184,110	166,313
Pennsylvania	790,217	432,774	354,060	319,834
South Carolina	82,577	155,638	80,460	72,682
Tennessee	841,748	380,422	353,520	319,346
Virginia	356,133	187,648	157,110	141,923
West Virginia	591,395	305,506	255,240	230,567
Total	6,014,896	3,360,104	3,000,000	2,710,000
Administration	625,000	0	290,000	290,000
Grand total	6,639,896	3,360,104	3,290,000	3,000,000

Since 1960, the 13 Appalachian States accounted for about one-third of total national ACP assistance, averaging about $67 million per year. The original 12 Appalachian States obligated some $22,363,987 in fiscal year 1964 in their Appalachian counties. One of the objectives of the 203 program is to coordinate 203 and ACP investments toward common objectives in designated project areas.

A $3 million appropriation was requested for fiscal year 1968 to maintain continuity in the program areas approved for fiscal year 1967. The same amount, $3 million, is being requested for fiscal year 1969 for continued concentration in already approved areas while the Commission continues to work with the States to prepare multiyear program investment plans for section 203 that will establish definitive needs for the remaining life of the act.

SECTION 205—MINE AREA RESTORATION

Mr. EVINS. Section 205. This is mine area restoration. You are asking for $5,293,000, and you have a carryover in this fund.

Mr. FLEMING. Yes, sir. There is a carryover of $3,993,000.

Mr. EVINS. You are asking for an appropriation of $1,300,000 plus the carryover.

Mr. FLEMING. That is correct, which gives an effective program of $5,293,000.

Mr. EVINS. Tell us about your activities under this section.

Mr. FLEMING. The bulk of the program activity under this section is in Pensylvania. The section was originally included in the act at the request of Governor Scranton who was instrumental in the initial planning on this program. It has been devoted primarily to mine fire control and subsidence in the anthracite region of Pennsylvania with some attention to smaller outcrop fires in the bituminous area of southwestern Pennsylvania that are generally related to air pollution. In Scranton, Wilkes-Barre and companion communities. These fires are a very serious threat to life and property from gas, heat, and subsidence. This appropriation level will permit us to move ahead in liquidation in a sense of the commitments or on projects that have already been initiated in some form.

MINE FIRES

Mr. EVINS. Fire in the west middle anthracite field in the Mount Carmel area and other places would affect 88,000 people and property valued at $160 million if allowed to burn. Well, are you making any progress in arresting the fires.

Mr. FLEMING. Yes. In the case of Mount Carmel the Bureau of Mines recommended with the State department of mines concurring only exploratory drillings costing $150,000 should be undertaken to established the perimeters of the fire and develop the engineering design to control it. In most cases it is not practical to try to extinguish a fire. All you can do is to block off the arteries of passage to keep it from spreading. There are eight or nine major mine fire projects initiated thus far in the anthracite region. All of these are moving ahead at a very rapid pace.

Mr. EVINS. You indicated, in Scranton alone, in the heart of the downtown area can be seen the adverse effects of earlier deep mining operations. According to a report of 1965, 12,493 acres of property in the county are consumed by stripping and culm banks. This is 15 percent of the Central Valley sector. Well you assess the problems. We hope you are able to do something about them. You are asking for $1,300,000 and that seems like a pretty small amount of money to settle all those problems.

Mr. FLEMING. The request is low because of the need to accomplish a lot of the work that has been initiated in the past.

STATE CONTRIBUTION

Mr. EVINS. How much is the State expending on this?

Mr. FLEMING. This is a 75 Federal, 25 State.

Mr. EVINS. 75–25.

Mr. FLEMING. It is somewhat unique in terms of Federal-State efforts in that the Federal Bureau of Mines is the contracting agent on these mine fire projects and the State pays in its share to the Federal agency rather than vice versa.

Mr. EVINS. How much is the Department of Interior spending in this area?

Mr. FLEMING. You mean under existing programs?

Mr. EVINS. In their mine fire program?

Mr. FLEMING. They have no strip mine program. Their mine fire program naturally runs about $400,000 and $500,000. This program authorized by section 205 represents the bulk of Federal activity addressed to this particular problem.

Mr. EVINS. In other words, this is the main treatment.

Mr. FLEMING. That is correct.

JUSTIFICATION MATERIAL

Mr. EVINS. The 1967 Amendments to the Appalachian Act authorized expenditures of funds also for culm bank removal and grading, the culm bank being the refuse left over from underground mining. One project is currently being developed in the Scranton area on which approximately $500,000 is the estimate as put together now which is

admittedly very rudimentary. This would be tied to an industrial park development where these funds would be used to restore the land keyed to other state and local financing efforts.

We will insert the justification material for this section.

(The justification follows:)

MINE AREA RESTORATION, SEC. 205

	Public Law 89-4		Public Law 90-103	
Authorization	$36,500,00		$30,000,000	
	1965-66	1967	1968	1969
Appropriation	$17,350,000	$7,500,000	$0	[1] $1,300,000
Obligation	714,000	10,302,000	[2] 8,000,000	[2] 5,293,000

[1] Request
[2] Estimate.

A sum of $1.3 million is requested for mine area restoration programs administered in the Department of the Interior in fiscal year 1969. This new obligational authority coupled with $3.993 million carried over into fiscal year 1969 under Public Law 90-218 will provide an effective program level of $5.293 million.

Since the beginning of the program $24.85 million has been appropriated. As of January 31, 1968, $21,083,396 in Federal funds have been approved for projects. The following table shows appropriations, approvals, obligations, and uncommitted funds as of January 31, 1968:

Activity	Appropriations (fiscal years 1965-68)	Projects approved		Obligation	Funds uncommitted
		Number	Federal dollars		
Fires and subsidence	[1] $20,800,000	36	$19,904,576	$10,592,077	$895,424
Surface reclamation:					
Bureau of Mines	[1] [2] 1,300,000	3	303,750	202,149	996,250
Fish and Wildlife Service	[3] 1,450,000	4	875,070	574,000	[4] 574,930
Strip study	500,000		500,000	500,000	0
Totals	24,050,000	43	21,583,396	11,858,226	2,466,604

[1] $2,000,000 reprogramed from surface reclamation to mine fire and subsidence.
[2] $400,000 reappropriated for research on the "conversation and development of mineral resources." (81 Stat. 64.)
[3] $400,000 reappropriated for construction programs of the Bureau of Sport Fisheries and Wildlife Service (Department of the Interior and related agencies Appropriation Act Public Law 90-28).
[4] Authority for the surface mine restoration program of the Fish and Wildlife Service has been deleted from Public Law 90-103 and these funds presently are not available to the Appalachian Commission.

After mine fire projects are approved by the Appalachian Commission, they are implemented by the Department of the Interior. Through the contribution contract, the Department of the Interior promises the State it will supply the agreed-upon Federal share of funds needed to complete the project. The State promises to do the same as far as State and local funds are concerned and it also assures the Department of the Interior that it will be free from any liability arising from work on the project. This latter factor has played an important role, unforeseen 2 years ago, in determining the pace at which the program has been implemented.

The difference between approved projects and funds obligated reflects the long-time period required to obtain releases from property and mineral rights owners at the project site. These releases are required to permit the Department to perform work without liability for damages, but obtaining them has been very time consuming.

The State legislature of Pennsylvania has under consideration a bill permitting quick access to threatened property through the use of the State's police powers for the protection of the health, safety, and general welfare of the people of the Commonwealth. Passage of this legislation by the State will greatly accelerate the combat of mine fires and subsidence.

MINE FIRES AND SUBSIDENCE

Most of the projects approved by the Commission are still a long way from completion and, accordingly, direct results have not yet been achieved in terms of improved conditions to promote economic growth. However, it is an inescapable fact that large numbers of people and high-value property would be adversely affected if the fires were allowed to burn. Also, the legacy of past mining is a serious impediment to development.

For example, in Carbondale, Pa., a fire directly affects a population of 200,000 people and property valued at $34 million. In Hazelton, $99 million in property is threatened. In Throop Township adjacent to Scranton, Pa., an industrial park is threatened which would affect 3,300 jobs, the total payroll of which is $17.5 million. Property damage is estimated at $18.6 million. In Scranton, a General Electric plant has been partially closed as a result of an underground fire and 600 jobs were lost to the area. Furthermore, the affected industrial park could ultimately develop 7,000 jobs if the underground fire is first extinguished, while surrounding residential and commercial property directly affected by this fire is valued at $6 million, not counting streets and public utilities.

The foregoing greatly understates the real damage of mine fires in terms of lost opportunities. Obviously, no businessman would invest in an area threatened by fire or which provides a pollution laden and noxious environment to its inhabitants.

In anthracite Pennsylvania alone there are several major coalfields. Fire, if unchecked, could burn through an entire field and eventually threaten much more in the way of property and population. The northern anthracite field, for example, is underneath the Wyoming Valley which is virtually a single urban complex running from Carbondale in the north through Scranton, Pittston, Wilkes-Barre and Nanticoke in the south. In 1960, there were roughly 442,000 people living in this valley and property is valued at $1.1 billion. A fire in the eastern middle anthracite field over which is centered the city of Hazleton, affects a population of 50,000 people and property valued at $118 million. Fire in the west middle anthracite field which underlies Shamokin, Mount Carmel, Ashland, Shenandoah, Frackville, and Mahanoy City would affect 88,000 people and property valued at $160 million if allowed to burn. In these examples, alone, roughly 200 square miles of land is affected.

From this point of view clearly, mine fires must sooner or later be extinguished even where only low value property is immediately threatened. It is just good economic sense to extinguish the fire while the cost of such extinguishment is lower and before high value property is threatened or destroyed.

SURFACE MINE RECLAMATION

The reclamation of strip and surface mine areas has not proceeded at a pace satisfactory to the Commission. The act provides that only publicly owned lands may be reclaimed under the program and little of the land in Appalachia scarred by strip mining is in public ownership. The report of the Secretary of the Interior indicated that only 4 percent of strip-mined acreage in the region is owned by public bodies and few of the States or units of local government within them have the capacity to acquire such land for reclamation. The Commission has, however, approved seven strip mine reclamation projects which, in total, will require $1,178,820 in Federal funds. With the exception of one project adjacent to the Pittsburgh Airport, all of these projects have been related to recreational developments.

The act was amended in 1967 to allow the cost of land acquisition for projects to be treated as part of the State's share of the project costs. In addition, it will be able to support projects where surface damage, such as waste piles, is the result of earlier deep mining activities.

This new authority will assist economic expansion in the rapidly growing areas of Eastern Pennsylvania. For example, in Scranton alone, in the heart of that community's downtown area can be seen the adverse effects of earlier deep mining operations. According to a land use report of 1965, 12,493 acres of property in Lackawanna County is consumd by stripping and culm banks. This is only 4.3 percent of all land in the county but represents 15 percent of the Central Valley sector, the area of greatest urban development. Waste piles dominate the central portion of the valley and several of these piles are presently having a blighting and noxious effect on surrounding developed land uses.

It is the intention of the Commission to proceed with some restraint in this area. Waste piles are expensive to move. Moreover, their removal should, in almost all cases, be carefully coordinated with other types of restoration, particularly subsidence projects. This is because of the requirements of subsidence projects for large amounts of fill materials. Waste piles are ideally suited from a physical and cost point of view to meet this requirement.

In July 1967, the Secretary of the Interior submitted to the President its final report on strip and surface mining in Appalachia. This report indicates 1,439,837 acres of land in the Appalachian States have been disturbed by surface mining and estimates that the cost of reclaiming this land would be $403 million.

Section 207—Housing Fund

Mr. Evins. Turn to section 207, Appalachian housing fund. You are requesting $2 million. There is no carryover. This is a new section added by the 1967 amendments.

Mr. Fleming. That is correct, the initiation of work under this section.

Mr. Evins. Presently approximately 1 million Appalachian families live in substandard housing. The distribution of these conditions even intensifies the problem. They are scattered all over. For example, in the most depressed areas of Kentucky and West Virginia less than 10 percent of the families live in adequate housing. Well $2 million is not going to solve that problem.

Mr. Fleming. What these funds are designed to do is to stimulate the use of section 221, particularly the below market interest rate provisions of that section, for nonprofit sponsors to develop low-cost and low- and moderate-cost housing in these areas. The basic 221 program simply has never been used to any extent outside of Pittsburgh, Binghamton, and Knoxville.

Mr. Evins. The grants will be used to meet the cost of obtaining competent technical assistance for initiating and managing the construction of 221 projects.

Section 221 of the National Housing Act

Mr. Fleming. That is section 221 of the Housing Act.

The 221 projects are difficult and demanding undertakings. In Appalachia the record will show that it is next to impossible here. I think the members of this committee are probably well aware that section 221 provides for FHA insurance.

Mr. Jonas. At less than market rate of interest.

Mr. Fleming. Section 221(d)(3) includes the below market interest rate program, currently 3 percent, for nonprofit institutions such as church and fraternal groups. We are trying to get State governments involved also.

Mr. Evins. How will these nonprofit institutions use these funds?

Mr. Fleming. These funds are designed to help them to get an application put together to get a 221 mortgage. In estimates we have from the FHA, 5 percent of the total project cost is required to put the application together.

Mr. Evins. Apparently to initiate 221 projects.

Mr. Fleming. Most of the available responsible sources within the Appalachian region simply have not been able to put together the 5-percent cost to get the architectural planning.

Mr. JONAS. This money will be granted?

Mr. FLEMING. No. There is authority for some small grants for technical assistance for planning management and to cover projects on which mortgages are not issued. The bulk of the money will be recaptured. They are loans which are advanced to responsible sources and recaptured when the mortgage is issued. There is a chart at the end of this section which shows the anticipated recapture on an annual basis. The act authorizes a revolving fund so these funds become available for reloaning. It is an advance, if you will, which is repayable at the time that the mortgage is issued.

Mr. PRYOR. Is this a misprint on page 2 of section 207? Where it says here in the next to the last paragraph: "As a result, the West Virginia Legislature is not considering"—should not that be "now"?

Mr. FLEMING. It should have been "now" when it was written and I guess right now it should be "not," because the legislation involved was passed by the senate in the West Virginia Legislature and was not passed by the house, largely because of the parliamentary situation. But it is anticipated that the bill will be brought up the next time it meets. The Kentucky Legislature is getting ready to consider the same kind of legislation which will involve the State providing the fund to make construction loans before permanent financing is secured.

NONPROFIT HOUSING INSTITUTIONS

Mr. TALCOTT. Mr. Chairman, are there any public nonprofit housing authorities or agencies in the Appalachian area?

Mr. FLEMING. Yes, there are.

Mr. TALCOTT. Why can they not participate in the Federal housing programs?

Mr. FLEMING. The public housing has been used to a fairly substantial degree.

Mr. TALCOTT. I do not necessarily mean low cost or big public housing developments, but are there not some public housing authorities that could take advantage of some of the Federal funds to provide separate houses, separate homes; without waiting for huge Federal low-cost housing ghettos?

Mr. FLEMING. We anticipate that the public bodies that qualify under FHA will use this program to a substantial degree.

Mr. TALCOTT. What is this Urban America, Inc.? Who are they?

Mr. FLEMING. It is a group that is headed by William J. Slayton who is former head of the Urban Renewal Administration. They specialize in trying to promote the planning, design, and development of communities.

Mr. TALCOTT. Are they volunteers or do they get pretty handsome salaries?

Mr. FLEMING. The contract we have with them that is referred to here is for almost $25,000.

Mr. EVINS. They have a lot of expert knowledge like a lawyer who has worked for the Government and goes out to practice law.

Mr. TALCOTT. Well do you check on their salaries? It is my understanding that some of these people are drawing very handsome salaries.

Mr. EVINS. The authorities who sponsor nonprofit organizations have a contract, do they not?

Mr. FLEMING. That is right. The reference to Urban America is related simply to delivery of services to the Commission and to the two States in this instance. Are we talking about them or talking about housing authorities who are nonprofit?

Mr. TALCOTT. Urban America, Inc.

Mr. FLEMING. I can't tell you right now the salaries of the officers, but they are a nonprofit organization.

Mr. TALCOTT. That is what I thought. We are supposed to be dealing with nonprofit organizations.

Mr. JONAS. Are they in the category of some architects who go around the country selling public housing to the communities and then offer to do all the paperwork?

Mr. FLEMING. That is right, the same way you hire an engineer or contractor to build a road.

Mr. TALCOTT. We had one of these so-called nonprofit organizations in our area whose organizers have no competence in housing construction or management. They are simply trying to put together housing authorities in my area to provide lucrative positions for the directors and promoters, and they are causing more trouble than doing good. We should be careful in dealing with these nonprofit corporations. They may not have the competence at all.

Mr. FLEMING. This is absolutely the case. The other problem is the need for a competent institution. One response that we have produced is the State housing corporation where you would have people on the State payroll who could assist in putting these projects together, arranging the financing and perhaps in the initial management. Most of the State governments are getting people to provide the technical assistance to implement this program.

HOUSING FUND JUSTIFICATION

Mr. EVINS. We will insert your housing fund justification material at this point.

(The information follows:)

APPALACHIAN HOUSING FUND, SEC. 207

	Public Law 89-4		Public Law 90-103	
Authorization			$5,000,000	
	1965-66	1967	1968	1969
Appropriation			$1,000,000	[1] $2,000,000
Obligation			[2] 1,000,000	[2] 2,000,000

[1] Request.
[2] Estimate.

Two million dollars is requested for further implementation of the program to stimulate low and moderate cost housing in the Appalachian region under section 221 of the National Housing Act. This program was authorized in the Appalachian Act Amendments of 1967 (Public Law 90-103). One million dollars was provided for it in fiscal year 1968 appropriation. Current estimates indicated these funds will be obligated by June 30, 1968.

Throughout the Appalachian region, housing quality and availability is a persistent problem.

At present, approximately 1 million Appalachian families live in substandard housing. The distribution of these conditions even intensifies the problems. For example, in the most depressed areas of Kentucky and West Virginia less than 10 percent of the families live in adequate housing.

Despite these conditions, very limited use is being made of operating Federal programs, with the exception of public housing. In the entire State of West Virginia, only 200 FHA mortgages for new single family construction in a typical year; in eastern Kentucky only 25 such mortgages will be insured. And with the exception of the larger metropolitan areas such as Pittsburgh or Birmingham, no use is being made of low and moderate income aids, including rent supplements.

In response to these conditions, the Congress added section 207 to the Appalachian Regional Development Act to authorize the Secretary of Housing and Urban Development, upon approval of the Commission, to make grants and loans to qualified sponsors to cover the costs of initiating low and moderate income housing projects under section 221 of the National Housing Act. Responsibility for administration of the program has been delegated to the Federal Housing Administration.

Grants will primarily be used to cover the costs of obtaining competent technical assistance for initiating and managing the construction of 221 projects. Under the best of conditions, 221 projects are difficult and demanding undertakings; in Appalachia the record (602 units built in 6 years) will show that it is next to impossible.

The loans will be made to cover specific items that a sponsor must fund in order to obtain a mortgage insurance commitment under section 221.

The items include:

(*a*) Land options;
(*b*) Market analyses;
(*c*) FHA and FNMA fees;
(*d*) Preliminary architectural fees;
(*e*) Preliminary site engineering fees;
(*f*) Construction loan financing fees;
(*g*) Construction loan discounts.

All of the above costs are eligible for inclusion in project mortgages, and will be recovered by the Government from mortgage proceeds.

Thus, the program authorized by section 207 is designed to meet two critical problems—the shortage of capital to initiate 221 projects and the lack of technical competence needed to get such projects organized. To capitalize on the opportunities presented by this program, the Commission has contracted with Urban America, Inc., for assistance in the design and organization of State, chartered, private housing corporations to assist the construction of low-income housing. The initial efforts under this contract have been addressed to the creation of such institutions in Kentucky and West Virginia. In addition to assisting in the stimulation of section 221 projects, it is hoped that these corporations will provide service to local organizations and assist in obtaining financing for the wide variety of housing, including the generation of private mortgage funds.

In several other States, notably, Pennsylvania, Ohio, New York, and North Carolina, State-supported personnel have been assigned to encourage and assist local sponsors in the development of projects. It appears that this activity will ge beyond 207–221 projects to stimulate other forms of new and rehabilitated housing in the region.

To facilitate the prompt availability and use of the 207 program, the Commission has requested the Federal Housing Administration to conduct housing market analyses for a number of communities in the region. Efforts are also underway to develop workable programs in communities where their absence is a principle impediment to the generation of 207–221 projects.

The following chart indicates the anticipated effect from the grants and loans made under the authority of section 207 as well as the rate for recapture of loans made from the Appalachian housing fund.

Mr. EVINS. I suggest we suspend until 1:30.

AFTERNOON SESSION

Mr. EVINS. The subcommittee will come to order. We will resume our hearings with the Appalachian Regional Commission this afternoon.

I believe we had concluded consideration of the mine area restoration, section 205 and the Appalachian housing, an item for $2 million.

VOCATIONAL EDUCATION FACILITIES, SECTION 211

Mr. EVINS. We will now look at the vocational educational facilities, section 211.

Here, you are asking for an appropriation of $14 million. This is one of your major programs.

How much did you expend in this program last year, Mr. Chairman?

Mr. FLEMING. Through fiscal 1967 a total of $16 million was appropriated for this program, all of which was committed with the exception of $7,000 which was carried over into fiscal 1968 and is recorded in this estimate.

Those funds, coupled with the section 214 funds prompted the construction of approximately 70 vocational educational schools of one type or another throughout the Appalachian region. In fiscal 1968, another 18 or 19 schools have been approved, so we now have 89 schools which have been financed in one way or another under the Appalachian Act.

Mr. EVINS. There are 89 vocational schools that have been assisted through the Appalachian educational bond.

Mr. FLEMING. That is correct.

I might add that during hearings and consideration of the Appalachian Act Amendments of 1967, the last year extension of the program, the vocational educational program was the only section where the authorization was expanded beyond what was requested.

It was increased to a 2-year authorization of $26 million. This $14 million request for fiscal 1969 would exhaust that. We are asking for the appropriation of the full authorization for this program.

Mr. EVINS. Could you tell us how much funding is planned or envisioned by the States?

I have an impression that you have more planning and requests for this than you have funds available.

Mr. FLEMING. These funds are 50-percent grant fund for the cost of construction and equipping vocational educational facilities. They are used in conjunction with Vocational Educational Act of 1963 funds.

The region, by population, will receive approximately $20 million under the Vocational Educational Act of 1963.

These funds would be supplemental to that. In other words, there would be a total availability of approximately $34 million in Federal funds for vocational educational construction and equipment grants.

NATIONAL VOCATIONAL EDUCATION PROGRAM

Mr. EVINS. The overall program that the Department of Education envisions, is this throughout the Nation or in Appalachia?

Mr. FLEMING. Throughout the Nation.

Mr. EVINS. How much will this provide for Appalachia?

Mr. FLEMING. The national program will provide about $20 million in Appalachia. This $14 million under section 211 is additional to that. Of that $20 million, according to the experience this year, about $7 million would be used for operations which is permissible under that basic statute, leaving approximately $13 million for grants for construction and operations, construction and equipment. This plus the $14 million requested under section 211 would provide $27 million. The States have identified projects that would require approximately $90 million total.

USE OF SECTION 211 FUNDS

Mr. EVINS. Will any of this $14 million be used for operations?

Mr. FLEMING. None for operations, only construction and equipment. The Vocational Education Act funds can be used for operations,

Mr. EVINS. Fine.

Mr. JONAS. But none of these funds are usable for operation?

Mr. FLEMING. No; just construction and equipment.

Mr. JONAS. Or maintenance?

Mr. FLEMING. No.

Mr. JONAS. For original construction?

Mr. FLEMING. Original construction and equipment. Under the 1967 act they can be used for new equipment in existing facilities, so there will be some equipment projects.

NUMBER OF SCHOOLS CONSTRUCTED

Mr. EVINS. Can you give us a breakdown as to how many trade schools or vocational schools have been built in each of the States?

Mr. FLEMING. I can provide that for the record.

Mr. EVINS. Provide a statement for the record. I have the impression this has been one of your more active programs.

Mr. FLEMING. It certainly has. There is a tremendous shift in curriculum going on nationally and doubly so in this region.

We have recently completed work undertaken by the Educational Advisory Committee the Commission established which indicates that some 350,000 people or students enrolled in vocational education in the region, over 60 percent are in agriculture and home economics, areas which are obviously declining as far as employment opportunities are concerned.

Almost all of the projects undertaken with these funds are addressed to trades and industries, construction trades, mechanical skills and so forth.

(The information follows:)

VOCATIONAL EDUCATION—PROJECTS APPROVED UNDER SECS. 211, 214, AND COMBINED 211 AND 214

FISCAL YEAR 1966

State	Number of projects, sec. 211	Amount, sec. 211	Number of projects, sec. 214	Amount, sec. 214	Number of projects, secs. 211 and 214	Amount, secs. 211 and 214	Total projects	Total amount
Alabama	1	396,330					1	396,330
Georgia			1	100,000	1	544,000	2	644,000
Kentucky					13	2,210,000	13	2,210,000
Maryland	1	300,000	1	54,000			2	354,000
Mississippi	0	0	0	0	0	0	0	0
New York					3	948,420	3	948,420
North Carolina	2	536,660	1	212,000	1	48,000	4	796,660
Ohio					1	1,199,000	1	1,199,000
Pennsylvania			1	85,980			1	85,980
South Carolina	0	0	0	0	0	0	0	0
Tennessee					3	1,080,000	3	1,080,000
Virginia			1	75,000			1	75,000
West Virginia			1	235,225			1	235,225
Total	4	1,232,990	6	762,205	22	6,029,420	32	8,024,615

FISCAL YEAR 1967

State	Number of projects, sec. 211	Amount, sec. 211	Number of projects, sec. 214	Amount, sec. 214	Number of projects, secs. 211 and 214	Amount, secs. 211 and 214	Total projects	Total amount
Alabama			1	93,750	2	1,090,130	3	1,183,880
Georgia	1	50,000			4	910,000	5	960,000
Kentucky			6	119,319	8	2,481,313	14	2,600,632
Maryland					1	600,000	1	600,000
Mississippi	0	0	0	0	0	0	0	0
New York			2	512,800	2	936,700	4	1,449,500
North Carolina	1	389,440	1	264,260	1	221,062	3	874,762
Ohio					1	1,637,588	1	1,637,588
Pennsylvania	5	2,469,311	3	1,155,487	1	492,240	9	4,117,033
South Carolina					5	1,785,700	5	1,785,700
Tennessee	1	383,000					1	383,000
Virginia			2	170,174	7	4,103,545	9	4,273,719
West Virginia			1	425,403	2	1,449,500	3	1,874,903
Total	8	3,291,751	16	2,741,193	34	15,707,778	58	21,704,722

FISCAL YEAR 1968

State	Number of projects, sec. 211	Amount, sec. 211	Number of projects, sec. 214	Amount, sec. 214	Number of projects, secs. 211 and 214	Amount, secs. 211 and 214	Total projects	Total amount
Alabama	0	0	0	0	1	544,000	1	544,000
Georgia	3	42,375	0	0	2	400,000	5	442,375
Kentucky	0	0	0	0	1	93,792	1	93,792
Maryland	2	112,684	0	0	0	0	2	112,684
Mississippi	0	0	0	0	0	0	0	0
New York	0	0	1	224,580	1	317,066	2	541,646
North Carolina	0	0	0	0	0	0	0	0
Ohio	0	0	0	0	0	0	0	0
Pennsylvania	2	562,500	4	1,253,301	0	0	6	1,815,801
South Carolina	0	0	0	0	2	577,500	2	577,500
Tennessee	0	0	0	0	0	0	0	0
Virginia	0	0	0	0	0	0	0	0
West Virginia	0	0	1	237,850	0	0	1	237,850
Total	7	717,559	6	1,715,731	7	1,932,358	20	4,365,648

SUMMARY VOCATIONAL EDUCATION—PROJECTS APPROVED UNDER SECS. 211, 214, AND 211 AND 214

Fiscal year	Number of project 211	Amount, sec. 211	Number of project 214	Amount, sec. 214	Number of projects 211 and 214	Amount, secs. 211 and 214	Total projects	Total amount
1966	4	$1,232,990	6	$762,205	22	$6,029,420	32	$8,024,615
1967	8	3,291,751	16	2,741,193	34	15,707,778	58	21,740,722
1968	7	717,559	6	1,715,731	7	1,933,358	20	4,365,648
Total	19	5,242,300	28	5,219,129	63	23,669,556	110	34,130,985

USE OF GRANTS

Mr. EVINS. Mr. Chairman, the overall vocational education program throughout the Nation is over $200 million. Part of it is for operation and part for construction, but in the Appalachian educational program, the grants are on a 50–50 basis for construction and for facilities. If operating funds are obtained, they are secured from other sources.

Mr. FLEMING. That is right.

Mr. EVINS. Your funds are committed to the construction of facilities.

Mr. FLEMING. That is right.

Mr. EVINS. You have been able thus far in your 4 years to build about 89 trade schools. We cited this morning a few examples that are shown here.

Mr. FLEMING. We have approximately 20 of those that were opened this last fall. The bulk of the others will be opened next September.

Mr. EVINS. This is interesting.

Mr. JONAS. As we could not really claim credit for inaugurating all these programs because your money in this program is supplementary to the State funds and Federal vocational and educational funds, is that not true?

Mr. FLEMING. That is true.

Mr. JONAS. This program is designed to provide, in these States and the region, some additional funds over and above those available from these other programs for vocational education.

Mr. FLEMING. That is correct.

Mr. EVINS. You state that the need for vocational education in Appalachia is indicated by these figures: of every 10 children in the first grade, six finish high school, two go to college, and one is graduated. This is nationally.

Here is what happens in the Appalachian region: Out of every 10, less than one graduates from college, and four finish high school.

In the Nation as a whole, high school dropouts are 40 percent, in Appalachia, it is 65 percent.

Now, this is a program that is designed to improve that condition. We cited these schools shown on page 3 in Somerset, Ky.; Asheville, N.C.; and Greenville, S.C.

FUNDING BY STATE

Mr. JONAS. I have a question by reason of the citation of these three examples. We do not have a table showing the breakdown of allocations and funds among the different States in this program as you have in others. I suppose it would be easy to furnish that?

Mr. FLEMING. I would be happy to provide that.

(The information follows:)

SECTION 211 FUNDS AVAILABLE TO EACH STATE

State	Fiscal year 1965-66 allocation	Fiscal year 1967 allocation	Fiscal year 1968 allocation	Total allocation
Alabama	$817,940	$217,920	$1,189,200	$2,225,060
Georgia	659,820	349,800	708,000	1,717,620
Kentucky	886,293	1,247,520	976,800	3,110,613
Maryland	300,020	300,000	418,800	1,018,820
Mississippi	0	0	598,800	598,800
New York	448,420	448,400	646,800	1,543,620
North Carolina	673,160	410,140	850,400	1,933,700
Ohio	541,780	541,760	770,400	1,853,940
Pennsylvania	1,144,347	1,645,160	2,152,800	4,942,307
South Carolina	461,860	461,840	649,200	1,572,900
Tennessee	1,058,540	600	1,153,200	2,212,340
Virginia	395,600	2,058,580	650,800	3,104,980
West Virginia	612,220	318,280	1,234,700	2,165,300
Total	9,000,000	8,000,000	12,000,000	28,000,000

Mr. JONAS. With respect to the Somerset area schools, what part of the cost of construction and equipping that institution did you provide?

Mr. FLEMING. That school was 50 percent out of section 211 and it was 30 percent out of section 214 with the remaining 20 percent from State and local funds.

Mr. EVINS. While the building of these vocational schools is on a 50–50 basis under statutory provision, if the local governmental unit is unable to raise their proportionate share, is there authority for the making of a supplemental grant?

Mr. FLEMING. Yes, sir.

Mr. EVINS. This is where the Appalachian program has come in to supplement these plans to make them become a reality.

Mr. FLEMING. That is correct. In the main, the supplemental assistance on vocational education has not been up to 80 percent as in most programs. It has been somewhat lower.

In Kentucky, there have been more 80-percent projects just because those school districts are the poorest in the region.

Mr. EVINS. You are confident you can use this entire $14 million?

Mr. FLEMING. Fully confident. As a matter of fact, the commitment of the Congress in the authorization bill which increased what was requested has tended to spur the States into more activity in this area. As I indicated the full appropriation was obligated during the first 2 years and a lot of additional projects were stimulated in the process.

VOCATIONAL EDUCATION JUSTIFICATION

Mr. EVINS. We will insert the justification for this program.

(The justification follows:)

VOCATIONAL EDUCATION FACILITIES, SEC. 211

	Public Law 89-4		Public Law 90-103	
Authorization	$16,000,000		$26,000,000	
	1965-66	1967	1968	1969
Appropriation	$8,000,000	$8,000,000	$12,000,000	[1] $14,000,000
Obligation	2,547,000	13,446,000	[2] 12,007,000	[2] 14,000,000

[1] Request.
[2] Estimate.

$14 million is requested for grants authorized by Section 211 to assist in constructing and equipping vocational education facilities. It is anticipated that all $12 million available for this purpose in fiscal year 1968 will be obligated by June 30, 1968.

Central to the economic plight of the Appalachian region is a large pool of untrained manpower which is reflective not only of the economy but also of the often underfinanced and poor quality schools in the region. Special funds for vocational education were authorized by Section 211 to help break the continuing cycle of unprepared youngsters coming into the labor force having either dropped out of school or finished a curriculum poorly tailored to potential employment.

The need for vocational education facilities in the Appalachian region is clearly indicated by the fact that nationally, of every 10 children who enter the first grade, six finish high school, two go to college and one is graduated from college. In the Appalachian region, of every 10 beginning the first grade, four students finish high school, one goes to college and, statistically, less than one is graduated. While 20 percent of high school graduates go to college nationwide, only 10 percent do so in the region. In the nation, the high school dropout rate is 40 percent. In Appalachia, it is 65 percent.

As a result most Appalachian youngsters, possessing a high school education or less, must compete in a labor market in which skills are at a premium. Given their background, their chances of having marketable skills are slim. This realization has given rise to accelerating demands in the Appalachian region for vocational education facilities.

To rectify these circumstances, improvement of education at all levels is required. The Elemenetary and Secondary and the Higher Education Acts are making major contributions to education in the region. The effect of these efforts will be felt over a relatively long period of time. This concentrated effort for vocational education development is addressed to the immediate opportunity to produce trained, employable youngsters at the end of high school or, in some cases, after high school.

The authorization in Section 211 is supplementary to monies available to states and school districts in the region under the Vocational Education Act of 1963. The budget request for this program for fiscal year 1969 is $199,309,000. These funds are apportioned among the states by a statutory formula. Based on the population of the region as a proportion of the participating states, approximately $20 million will be available to the region under this legislation.

Thus, the total Federal assistance for vocational education in the region will be approximately $34 million. It should be noted that Vocational Education Act of 1963 funds may be used for operating costs as well as construction and equipment subject to the limitation that at least 25 percent of a state's allocation must be devoted to construction. Seventy-one percent of the funds disbursed under this program nationally have been used for operations.

In Appalachia, just the reverse has been true historically. About 75 percent of these funds have gone for construction. This in itself indicates the dearth of facilities in the region. As more and more schools (70 have been approved in fiscal years 1966 and 1967) are opened, there are increasing demands for operating funds and thereby less for new facilities. Thus, if the full amount requested is made available under section 211, a total of only $20 to $25 million in Federal funds will be provided for construction and equipment grants in the region in fiscal year 1969.

In part, the existence of the Appalachian program has prompted exceptional efforts in the State governments and local school systems to upgrade and, in many cases, initiate vocational training. Through fiscal year 1967, $16 million was appropriated under section 211 and $15,993,000 was obligated. In the process, a great many valuable proposals have been developed. The State governments now have in being plans for new vocational education facilities requiring $87.9 million in fiscal year 1969.

A portion of this demand for funds stems from the enormous need for converting courses offered from the fields of vocational agriculture and home economics to industrial crafts. Such a shift produces equipment costs even where no new construction is required.

Due to the process of State plans, cooperative services, and Commission criteria, emphasis is being given to the new secondary and postsecondary technical courses in high-wage, high-skill growth occupations. For example:

1. Somerset Area Vocational School in Somerset, Ky., is providing central postsecondary technical training for all the youth in the State in aircraft-related skills such as aircraft engine mechanics, aircraft instrumentation, and control tower operations. This school is located next to the local airport and flight service facility, and is serving projected needs for a growing demand for such skills throughout the State.

2. Asheville-Buncombe Technical Institute, Asheville, N.C., with its four extensions serves 15 western North Carolina counties and offers training in electronics, mechanical, civil, and chemical engineering, drafting, data processing, tool and die making, radio and TV servicing, and has opened a new curriculum for motel management and other occupations related to needs created by a growing tourism industry. All of these training courses were designed in cooperation with local industry and their growing needs.

3. Greenville Technical Institute, Greenville, S.C., provides postsecondary education for all in South Carolina's six Appalachian counties and has model programs in the health occupations areas in which there is tremendous regional and national demand. Offerings include inhalation therapy, EKG technology, medical secretary training, surgical technology, and 19 other critical medical occupational areas. This institute is a critical component of a demonstration project to provide urban equivalent medical services in a dispersed multicounty rural area, under section 202. Further, it is providing needed paraprofessional medical personnel for the southern part of the region.

Regional vocational-technical centers are considerably accelerating progress toward multicounty cooperation in larger districts, stimulating growth of new and modern job demands, and supporting new high-skill industry which have been attracted in part by the trained manpower produced by such centers.

A basic premise of the entire Appalachian program is that there will continue to be a migration from one part of the region to another, either in residence or by commutation to work. Thus, the vocational education facilities and curriculums developed in the region must be responsive to the potential labor demands of fairly large areas.

In an attempt to gear vocational course offerings more closely to the needs of industry, locally and regionally, the Commission, working with its Education Advisory Committee, and in cooperation with the Departments of Labor and Health, Education, and Welfare, has embarked on the survey to determine the projected needs of industry in the Appalachian region in 1975. The needs will be broken down into occupational groupings and specific skill areas and these used as a guide for curriculum development in the region. Every effort is being made to have this data available for fiscal year 1969 project and curriculum planning.

Sewage-Treatment Facilities, Section 212

Mr. Evins. Gentlemen, let us take a look at the next program. This is section 212 for sewage-treatment facilities.

You are requesting $4 million and you have a $18,000 carryover for a total program of $4,000,018.

Will this exhaust the authority for these sewage-treatment grants under the Appalachian programs?

Mr. Fleming. That is correct. That exhausts the authorization.

Mr. Evins. We were told by another agency that this committee hears, that they had many more requests for water and sewage-treatment facilities than they had funds.

There is a great demand for funds in this area. Will these funds be used to supplement the other programs; to initiate new programs, or what?

Relation to National Program

Mr. Fleming. As in the case of the vocational education, this adds some additional funds for this purpose, earmarked for the Appalachian region.

We estimate, of the national program for the construction of municipal waste-treatment plants, approximately $25 million will be available to the Appalachian region, in addition to this $4 million.

Mr. EVINS. $25 million will be available in other programs for the Appalachian region.

Mr. FLEMING. That is right, that is under Public Law 660—the Water Pollution Control Act.

This additional $4 million would be on top of that, making a program in the region of about $30 million. These are basically 30 percent grants, although the statute permits 40 percent and 50 percent grants if the States establish water quality standards and themselves enact a matching program for this purpose.

There are only three States in the Appalachian region that use that 50-percent provision—New York, Pennsylvania, and Maryland. Others are still working to get their water quality standards established to the satisfaction of the Interior Department.

The total need, as estimated in the inventory of municipal waste treatment facilities in the region and the country, is greatly in excess of the funds requested. These funds, as in all cases, will be used selectively.

Mr. EVINS. The table at the bottom of the page shows the size of the community. There are 4,417 small communities benefiting from this program.

Mr. JONAS. Is this a direct grant to the municipality?

Mr. FLEMING. Yes.

Mr. JONAS. Or public body from the commission, or does it go through the State?

Mr. FLEMING. It goes through the Interior Department. It is administered like the Public Law 660 program.

Mr. JONAS. You turn your money over to Interior and that Department disburses it?

Mr. FLEMING. Just as in the way the highway program is administered by the Bureau of Public Roads?

Mr. EVINS. The application is processed through the State Governor to the Commission and then it is turned over to the Department for funding?

Mr. FLEMING. That is correct.

JUSTIFICATION MATERIAL

Mr. EVINS. If there are no questions, we will place these three pages of the justification into the record.

(The justification follows:)

SECTION 212

	Public Law 89-4		Public Law 90-103	
Authorization	$6,000,000		$6,000,000	
	1965-66	1967	1968	1969
Appropriation	$3,000,000	$3,000,000	$1,410,000	[1] $4,000,000
Obligation	1,556,000	1,389,000	[2] 4,447,000	[2] 4,018,000

[1] Request.
[2] Estimate.

Four million dollars is requested for sewage treatment facilities in fiscal year 1969. This new obligational authority combined with $18,000 carried over into fiscal year 1969 under Public Law 90–218 will provide an effective program level of $4.018 million.

Section 212 of Public Law 90–103 authorizes $6 million in grants for the construction of sewage treatment plants. These funds are in addition to those allocated by the States under the authoriy of Public Law 660 and subject to the same requests.

The best available measure of need for sewage treatment facilities was published by the Department of Health, Education, and Welfare in 1963—"1962 Inventory: Municipal Waste Facilities." This was a comprehensive survey of national needs and showed the number of treatment facilities needed, by size of community. The survey showed:

NUMBER OF FACILITIES

Size of community	Total need, United States	Total need, Appalachia
100,000 and over	52	5
50,000 to 99,999	56	7
25,000 to 49,999	76	40
10,000 to 24,999	273	62
5,000 to 9,999	416	97
0 to 4,999	4,417	762
Total	5,290	[1] 973

[1] 18.4 percent.

The number of facilities needed can be translated into costs by using the experience of the Federal Water Pollution Control Agency in constructing sewage treatment plants. Costs which vary by size of facility are applied to the table above to translate the number of facilities into costs. These are shown below.

[In thousands of dollars]

Size of community	Total need, United States	Total need, Appalachia
100,000 and over	488,649	46,985
50,000 to 99,999	174,757	21,845
25,000 to 49,999	144,488	76,046
10,000 to 24,999	318,317	72,292
5,000 to 9,999	268,672	62,647
0 to 4,999	737,802	126,937
Total	2,130,684	[1] 406,752

[1] 19 percent.

The region has, according to November 1967 population estimates, 9.2 percent of the Nation's population. As can be seen from the above tables, however, it has 19 percent of the Nation's need for treatment facilities. Topography and lagging economic activity, among others, account for the wide difference between the percentage of population and the percentage of need in the region. This difference was the main reason for including section 212 in the original Appalachian Regional Redevelopment Act and for reauthorization in 1967 amendments.

According to data from the Federal Water Pollution Control Agency, the estimated total cost of all sewage treatment projects approved for the Nation under the authority of WPCA, APWA, AROA, and PWEOA is $3,635,183,000. The cost of all projects approved in the Appalachian region as of October 1967 however, is $322,439,264, or only 8.9 percent of the total. In other words, with 19 percent of the need, the region has received only 8.9 percent of new construction.

Need, as stated above, does not take into account three factors: replacement of worn out facilities; expansion of existing facilities based on industrial needs, and; population growth and shift. When these three factors are taken into account, the Department of Interior estimates that it would require about $600 million each year to meet the Nation's water treatment needs over the next 10 years.

It is expected that the Appalachian region's share of this need is greater than normal. For while there are fewer treatment facilities to begin with which would need replacement, there will be a greater than normal shift in population. Most of this will take place in small urban areas within the region—the growth centers—and will take place on a scale exceeding the national average. Moreover, to meet the needs of industry, more expansions of existing facilities will most likely be required in Appalachia than elsewhere.

It should be noted that on January 10, 1968, the Federal Water Pollution Control Administration issued a new estimate of need in its report to the President and the Congress, "The Cost of Clean Water." This report contained sewage treatment capital requirements for each of the 5 years 1969–73 and took into account such factors as population growth and obsolescence. It also took into account the existing backlog of need. Since the 1962 inventory referred to earlier considered only the existing backlog as of that time, the latest report is obviously much more comprehensive.

It is unfortunate, however, that county data are not available in the report so that there is no way of isolating and identifying the sewage treatment needs in Appalachia. However, the average annual requirement for capital outlays nationally is $2.65 billion, or 24 percent more than was shown in the 1962 report. One can safely assume need in Appalachia has risen at least proportionately.

Supplements to Federal Grant-in-Aid Programs, Section 214

Mr. Evins. We will look at section 214, the supplements to Federal grant-in-aid programs.

You are asking for an appropriation of $36,300,000 and you have a carryover of about $1,261,000.

Mr. Fleming. That is right.

Mr. Evins. Which will make a total program next year of $37,561,000.

Mr. Evins. In any of these several programs, if it is found that the local interests are unable to raise the entire amount of money, they can make application for a supplemental grant for a specific project?

Mr. Fleming. That is correct.

Mr. Evins. This program does not apply to your highway program.

Mr. Fleming. That is correct. This is only with sections 211 and 212 of the Appalachian Act and other Federal grant-in-aid programs.

FUNDING TO DATE

Mr. Evins. How much money has been expended in the supplemental grants program to date?

Mr. Fleming. Through fiscal 1968, $109 million has been appropriated for this purpose.

Mr. Evins. How much has been authorized?

Mr. Fleming. The initial authorization was for $90 million and then it was reauthorized for 1968 and 1969.

Mr. Evins. For $97 million?

Mr. Fleming. That is correct.

Mr. Napolitano. It was $90 million for the 1965–67 period.

Mr. Evins. How much has been authorized for the supplemental grants program in total?

Mr. Fleming. It is $187 million.

Mr. Evins. $187 million.

Mr. FLEMING. Of that, $109 million has been appropriated through fiscal 1968.

Mr. EVINS. Leaving how much available?

Mr. FLEMING. $63 million. The initial $90 million can be ignored. The effective authorization is $97 million of which $34 million has been appropriated, leaving a remainder of $63 million.

Mr. EVINS. The original authorization was for $90 and the next authorization was $97 million additional.

Mr. FLEMING. Additional.

The $90 milion expired. Of the $90 million, $75 million was appropriated.

Mr. EVINS. The remainder expired?

Mr. FLEMING. The $15 million expired.

Mr. EVINS. I thought it was a continuing authorization.

Mr. FLEMING. It was replaced with a new, 2-year authorization of $97 million.

Mr. EVINS. That would be $171 million.

Mr. FLEMING. That is right, of which $109 million has been appropriated.

Mr. EVINS. Why didn't you obligate all of your $90 million authorization?

Mr. FLEMING. Frankly, the reason that the obligation figure was low at the end of 1967, it was a great many basic act grants, vocational education, higher education, and airports, and so forth, tended to be approved by the administering agencies in June, and we could not act on the supplemental grants until July and August. The chart at the end of the section shows funds committed against fiscal 1967. We have included, under fiscal year 1967, some funds actually obligated in fiscal 1968 to give a true picture against the national programs in 1967.

If a Vocational Educational Act grant is approved in June, that shows up as a 1967 obligation in the Office of Education. We cannot act on a supplemental grant until the basic funds are assured so the supplemental grant may not be approved until July, so that shows up as a 1968 obligation, but it is related to a fiscal 1967 program. It is for that reason that the accounting gets slightly out of whack.

It is for that reason that the obligation estimate was so high this year in fiscal 1968 of $51 million, because we are catching up on 1967.

REQUESTS FOR SUPPLEMENTAL GRANTS

Mr. EVINS. Mr. Chairman, since the beginning of the Appalachian program, in numbers, how many requests for supplemental grants has the Commission received?

Mr. FLEMING. We have approved 476 grants under section 214 since the beginning of the program. We have no way of knowing with any precision how many requests the States have turned down. The Commission itself has never disapproved a request, although many have been withdrawn by the States.

Mr. EVINS. Mr. Chairman, have they all been funded?

Mr. FLEMING. Not all requests made by the States. The State is under an obligation to submit their request up to its authorized allocation. Funds are allocated to the States as a yardstick for their planning. A State is required to come in with a package of projects for the year.

Mr. EVINS. But, they are not expected to be funded beyond a specified level?

Mr. FLEMING. That is correct. So, unless something is deficient with the project or is not compatible with the State's plans—there are a number of projects withdrawn for a number of reasons or another—the State submits a full program for its funds on a fiscal year basis.

SUBMISSION OF PLANS

Mr. EVINS. Do they submit the plans all at one time or do they submit various programs as they can be processed?

Mr. FLEMING. The State submits an annual investment plan.

Mr. EVINS. They submit one package.

Mr. FLEMING. That is right; and we look at it from the State's own analysis and what is needed.

Mr. EVINS. Are the Governors of the other States sitting in on the approval of a plan for any one particular State?

Mr. FLEMING. These plans are approved by the Commission as a whole when they are approved.

Mr. EVINS. If a State plan is within the amount of the allocated fund, the Governors of the other States are not concerned?

Mr. FLEMING. You are accurate in that. I fall heir to the responsibility of taking a look at that to see that it is consistent with the purpose of the act.

Mr. EVINS. Well, I imagine your supplemental grant program is very popular and you expect you can use this $37,561,000 next year.

Mr. FLEMING. We think that is just about right. This estimate has been arrived at as indicated by the text on the basis of what experience indicates it will take to get the Appalachian region its share of the national programs if the population warrants it.

This estimate is based on the attraction of 10 percent of these national grant-in-aid programs into the region. Obviously, more will come in, depending on program priorities and the kinds of plans the States will develop, but the 10-percent guide is warranted by the past experience here.

Mr. EVINS. I noticed in reading your justification that in other areas under the other programs, States outside of Appalachia were receiving a larger proportionate share and it is estimated that based on the population for the entire area, about a 10-percent supplementary grant would bring them up to the national average level.

Mr. FLEMING. That is true.

Mr. EVINS. Is that how you arrived at your 10 percent?

Mr. FLEMING. That is right.

FUNDING FROM BASIC PROGRAMS

Mr. EVINS. Mr. Chairman, explain this chart of page 3 for us.

Mr. FLEMING. That is the amount of money attracted into the region under the basic programs.

In other words, $65 million was spent there in fiscal 1965 with no expenditure under the 214 program. It jumped to $110 million in one year under the influence of the supplemental grant program and was up to $123 million in fiscal 1967.

I anticipate this will level off a little bit in 1968 and 1969 mainly because the national programs are tending to be about the same level as in fiscal 1967.

Mr. EVINS. This shows the amounts expended each year?

Mr. FLEMING. Yes, sir.

Those are the funds attracted into the region under the basic grant-in-aid programs.

Under the section 214 column it shows what it took to get there.

JUSTIFICATION MATERIAL

Mr. EVINS. We will insert the justification material for the supplements to Federal grant-in-aids programs.

(The justification follows:)

SUPPLEMENTS TO FEDERAL GRANT-IN-AID PROGRAMS, SEC. 214

	Public Law 89-4		Public Law 90-103	
Authorization	$90,000,000		$97,000,000	
	1965-66	1967	1968	1969
Appropriation	$45,000,000	$30,000,000	$34,000,000	[1] $36,300,000
Obligation	16,121,000	40,618,000	[2] 51,000,000	[2] 37,561,000

[1] Request.
[2] Estimate.

In fiscal year 1969, $36.3 million is requested for supplemental assistance to be expended by the major Federal grant-in-aid agencies. This new obligational authority, coupled with $1,261,000 carried over into fiscal year 1969 under Public Law 90–218, will provide an effective program level of $37,561,000.

This program, under section 214 of the Appalachian Regional Development Act of 1965, as amended, was reauthorized by the 90th Congress because of the great many communities, counties and States in the region which are and have been unable to supply the matching funds to take full advantage of existing Federal grant-in-aid programs. Because of this a large amount of Federal grant-in-aid funds, which otherwise might have gone into the region, went by default.

In the brief history of the Appalachian regional development program, supplemental assistance under section 214 has produced the desired result, as indicated on the accompanying table which compares the amount of basic Federal grant-in-aid going into the region in fiscal 1965, when no 214 funds were available, and fiscal 1966 and fiscal 1967, when they were. The chart does not include every Federal grant-in-aid program that can be supplemented with 214 funds. Such programs as small watersheds, soil conservation and outdoor recreation have been excluded because these programs have low priority in State and Commission planning and project development.

A new device has been created as a yardstick to determine the amount of section 214 funds that should be made available to the region. Its predicate is an equitable share for Appalachia of all grant-in-aid funds going to the Nation as a whole. The Bureau of the Census estimated that as of November 1967, the Appalachian region, including the additional counties of Mississippi, contained 18.25 million people, or 9.13 percent of a national population of 200 million. In 1965, prior to the passage of the Appalachian Act, the region received 7.7 percent of the funds obligated from these major grant-in-aid programs. In 1966, this rose to 9.2 percent, and in 1967, to 9.7 percent. A valid target for the region would be 10 percent of all grant-in-aid funds, given the region's share of the national population and its past inability to take advantage of national programs, plus

the effort represented in the Appalachian legislation to life the region to economic parity with the Nation.

In fiscal 1966 and fiscal 1967, every dollar in 214 funds generated $4 of Federal grant-in-aid funds for projects in the Appalachian region. Of all projects, only half were financed with the assistance of 214 funds. Thus, on projects funded with supplemental grant funds, the ratio has been one 214 dollar to two in basic grant funds.

This would indicate that section 214 funds should be budgeted at a level of 25 percent of the amount of basic Federal grants-in-aid set as the target for the region for a particular fiscal year. If the target for Appalachia is 10 percent of grant-in-aid funds going to the Nation, then 25 percent of that amount should be made available under section 214.

The accompanying table shows that actual obligations in fiscal 1967 in the 13 major grant-in-aid programs nationally amounted to almost $1.4 billion. The portion obligated in the Appalachian region was $135.5 million, or 9.9 percent. The amount of 214 funds expended was $39.1 million, which was 28.8 percent of the Appalachian share of the national total.

The attempt here is not to adhere rigidly to a fixed set of numbers, but rather to approximate these percentages. Hence, the estimated total of Federal grant-in-aid funds to be obligated throughout the Nation in fiscal 1969 is $1,380,370,000. If 10 percent of this may be expected to be obligated in the Appalachian region, then the Appalachian portion would be $138,037,000. And the section 214 percentage under the formula would be $34.5 million.

The request, however, for section 214 is for $36.3 million, because there are other grant-in-aid programs not listed on the table which can be supplemented under 214, most notably sections 211 and 212 of the Appalachian Act which provide basic grant-in-aid funds for sewage treatment and vocational education respectively.

SELECTED FEDERAL PROGRAM OBLIGATIONS IN APPALACHIA, FISCAL YEARS 1965-67

Program	Fiscal year	Expenditures, Appalachia	Sec. 214
Libraries	1965	$2,054,974	
	1966	3,736,887	$2,422,813
	1967	3,133,834	1,687,999
Vocational education	1965	6,157,296	
	1966	13,696,215	4,928,315
	1967	13,252,731	8,319,967
Higher education	1965	18,950,993	
	1966	43,662,098	8,811,362
	1967	43,958,333	11,187,049
Sewage treatment	1965	11,829,037	
	1966	13,612,113	4,886,087
	1967	14,746,448	2,489,871
Hospitals	1965	18,209,797	
	1966	25,131,005	4,755,145
	1967	40,296,475	9,147,740
Airports	1965	7,934,570	
	1966	10,644,272	842,949
	1967	8,409,378	636,912
Total	1965	65,136,667	
	1966	110,482,590	26,646,671
	1967	123,797,199	33,469,538

FEDERAL FUNDS OBLIGATED OR ESTIMATED IN 13 MAJOR GRANT-IN-AID PROGRAMS, FISCAL YEARS 1966–69, PLUS SEC. 214 APPALACHIAN SUPPLEMENTAL FUNDS

[In thousands of dollars]

	1966 actual	1967 actual	1968 estimates	1969 estimates
Airports (FAA)	75,000	61,389	86,331	88,000
Health facilities (PHS):				
Hospitals	139,407	131,151	128,498	134,595
Long-term care facilities	39,519	54,739	63,010	72,719
Other health facilities	31,101	78,299	71,260	83,535
Physically and mentally handicapped (PHS)	1,500			
Community mental health centers (PHS)	34,561	15,000	45,000	45,000
Higher Education (OE):				
Public community colleges	104,824	102,146	67,000	67,000
Other undergraduate facilities	357,258	344,930	207,452	133,000
Graduate facilities	60,000	59,977	33,000	25,577
Vocational education (OE)	209,599	198,189	199,309	199,309
Public libraries (OE)	29,778	24,582	33,602	18,185
Waste treatment works (FWPCA)	118,079	133,992	174,442	242,000
Rural water and waste disposal (FHA)			23,000	23,500
Basic water and sewer facilities (HUD)			175,000	150,000
Other [1]		163,475	158,280	97,950
Total	1,205,626	1,367,869	1,465,184	1,380,370
Total grants in Appalachian region	[2] 110,483	[4] 136,174	[6] 146,518	[8] 138,037
Sec. 214 supplemental grants	[3] 27,892	[5] 36,163	[7] 36,629	[9] 34,509

[1] NDEA and Bureau of Outdoor Recreation land and water conservation fund projects.
[2] 9.9 percent of national total.
[3] 23.3 percent of $110,483.
[4] 9.9 percent of national total.
[5] 26.5 percent of $136,174.
[6] 10 percent of national total.
[7] 25 percent of $146,518.
[8] 10 percent of national total.
[9] 25 percent of $138,037.

Local Development District and Research Program, Section 302

Mr. Evins. Take a look now at your local development district and research program. You are requesting $3 million for grants for the local development district program in 1969 and you have a carryover of $261,000 from last year for a total program of $3,261,000.

Federal grants for 75 percent of the administrative costs of State-sponsored local development districts for a maximum grant period of 3 years have enabled the Appalachian States to promptly implement the Appalachian program.

More importantly, the personnel provided a base on which the States and multicounty districts can build sound economic development programs. During the first years of the program, funds have been used to support State-employed administrative and planning staffs to define the districts and organize local development groups leading to sound, locally rooted organizations. In general, the Appalachian States have taken one of three courses to organize their local development district program. Some, like Georgia and Kentucky, have expanded and extended existing development commissions. Others, like South Carolina, New York, and Maryland, have set up Appalachian areawide committees on which are represented local leaders. Most have funded new multicounty organizations to coordinate not only efforts under the Appalachian Act, but consistent with the criteria for development districts under the Public Works and Economic Development Act of 1965.

Some States are conducting studies to determine whether their districts should encompass their whole Appalachian portion or concentrate on smaller multicounty areas.

These funds are made on a 75-percent grant to the States for the districts, is that correct?

Mr. FLEMING. That is correct.

Mr. EVINS. These are the the planning groups?

Mr. FLEMING. That is correct.

CENTRAL APPALACHIA STUDY

Mr. EVINS. Mr. Chairman tell us about the central Appalachia study.

What is the plan?

Mr. FLEMING. The central Appalachia study covers a 60-county area in Kentucky, West Virginia, and Tennessee——

Mr. EVINS. The Commission staff was assisting the States by developing area plans addressed to endemic economic and social problems that are interstate in character or by assisting them in developing special interstate growth opportunities.

The central Appalachian area of eastern Kentucky, southern West Virginia, southwestern Virginia, and northern Tennessee is receiving special attention.

The area defined as central Appalachia is composed of 60 counties in the States of Kentucky, Tennessee, Virginia, and West Virginia and includes many of the poorest counties of the region.

The primary emphasis of the central Appalachia study will be to prepare project applications for a coordinated series of Federal programs to be implemented in the region. Program emphasis is on pooling educational resources, manpower training, housing development, and urban services.

Tell us what is envisioned.

Mr. FLEMING. The four States are cooperating in a joint planning venture to try to deal with this area, particularly in Kentucky and southern West Virginia which represents the greatest economic problems and the highest incidence of poverty in the region.

Really, what is involved is a special planning effort to try to figure out how to use the program more effectively, lift it out of the administrative channels and make a crash effort on a set of programs and problems.

Mr. EVINS. Well, you have several good, on-going local development districts.

Mr. FLEMING. That is right. They are cooperating in this effort.

Mr. EVINS. This is an interstate development group. It is a four-State planning effort with the development districts in the area participating and trying to coordinate their own projects.

Mr. FLEMING. That is right.

Mr. EVINS. I am not opposed to planning, Mr. Chairman. I am for good sound planning, but is this just another layer on the top of the cake?

Mr. FLEMING. This is really an effort to try to do the job for a number of different areas and communities at the same time.

Mr. EVINS. Is it conflicting?

Mr. FLEMING. No, Mr. Chairman, it does not conflict. As a matter of fact, it is assisting the States in the production of their development plans.

Mr. EVINS. What will it cost?

Mr. FLEMING. The cost to the Commission is about $60,000. A great deal of it has been supported through the States and the local communities with their own funds and with 701 planning funds out of the housing program.

ALLOCATION OF FUNDS

Mr. EVINS. How will this $3,261,000 be allocated?

Mr. FLEMING. The formula in the past has been to allocate on the basis of land area and population. The stated estimate included on page 4 as to the commitments by State is really predicated on reported State need. What we have done, in effect, is to sit down with each State and work out what is needed to get the job done, and then to base the budget request on that.

In other words, these figures do not follow a formula allocation. They follow what the State feels is necessary.

Mr. EVINS. Could it be 100 percent?

Mr. FLEMING. It would be 75 percent by law. It is 75 percent of cost.

Mr. EVINS. It is 75 percent by law and then these funds are allocated to the State by needs?

Mr. FLEMING. That is right.

Mr. EVINS. Well, I am sure that these local development districts are coming up with good plans. We have had a lot of planning.

Mr. FLEMING. For example, one reason that Tennessee drops off sharply from 1968 to 1969 is because the State is moving to the establishment of local districts exclusively and no funds will be used at the State level. The two largest districts in Tennessee are being funded under the Public Works and Economic Development Act, and the $41,000 will be used primarily in the upper Cumberland area to support the local development district up there.

Mr. EVINS. Is this money going to go to the interstate development district, or to several of the local development districts?

Mr. FLEMING. This will go to the local.

Mr. EVINS. You discussed your interstate area plans.

Mr. FLEMING. The central Appalachia work is not a development district, as such. It represents an interstate effort that the State government is securing for them.

Mr. EVINS. How much will be committed to local development districts?

Mr. FLEMING. $1,561,000 is the estimate for local development districts.

Mr. EVINS. What is the other?

RESEARCH STUDIES

Mr. FLEMING. The one million and a half for research studies and demonstration projects authorized by the Congress this past year and the $500,000 will be used to carry that work forward. The $500,000 is obligated for research.

Mr. EVINS. About $1.5 million of the funds will be grants to districts?

Mr. FLEMING. That is right.
Mr. EVINS. Others will be administrative costs and research?
Mr. FLEMING. Primarily research.
Mr. EVINS. And special studies?
Mr. FLEMING. A half million on this drain study.

JUSTIFICATION MATERIAL

Mr. EVINS. All right, place all this in the record under section 302 with the exception of the last page.
(The justification follows:)

LOCAL DEVELOPMENT DISTRICT AND RESEARCH PROGRAM, SEC. 302

	Public Law 89-4		Public Law 90-103	
Authorization	$5,500,000		$11,900,000	
	1965-66	1967	1968	1969
Appropriation	$2,500,000	$2,750,000	$1,600,000	[1] $3,000,000
Obligation	1,631,000	1,708,000	[2] 3,250,000	[2] 3,261,000

[1] Request.
[2] Estimate.

Three million dollars in new obligational authority is requested under section 302 for grants for administrative expenses of local development districts, research and demonstration projects, and a special study of mine acid drainage pollution. A carryover of $261,000 is anticipated for a program level of $3.261 million in fiscal year 1969. Of this total, it is anticipated that $1,561,000 will be committed to the development district program and $1,550,000 for research. Costs of administration will require $150,000.

The local development district program was enacted to provide the means for consolidating planning and financial resources in multicounty areas and to help develop the technical competence essential to sound development efforts. It is clear that collectively a number of counties and communities can develop and support needed public facilities, most of which individually they cannot afford.

Federal grants for 75 percent of the administrative costs of State-sponsored local development districts for a maximum grant period of 3 years have enabled the Appalachian States to promptly implement the Appalachian program. More importantly, the personnel provided a base on which the States and multicounty districts can build sound economic development programs. During the first years of the program, funds have been used to support State-employed administrative and planning staffs to define the districts and organize local development groups leading sound, locally rooted organizations.

These State-employed staffs will be financed entirely by State funds during fiscal year 1969, except in two States where the 3-year grant period does not expire until the end of fiscal year 1969.

The districts provide an effective bridge between local and State governments in much the same way as the Appalachian Regional Commission provides a bridge for the Federal and State governments. They help assure that local aspirations and priorities are fully considered in the implementation of the Appalachian regional development program.

By January 1968, 18 active districts at the multicounty level had been established. By the end of fiscal year 1969, it is expected that there will be 37 active multicounty districts in the region. During fiscal year 1968, therefore, the States are shifting from State-employed technical staffs to the establishment of permanent development organizations and staffs at the multicounty level.

In general, the Appalachian States have taken one of three courses to organize their local development district program. Some, like Georgia and Kentucky, have expanded and extended existing development commissions. Others, like

South Carolina, New York, and Maryland, have set up Appalachian areawide committees on which are represented local leaders. Most have funded new multicounty organizations to coordinate not only efforts under the Appalachian Act but consistent with the criteria for development districts under the Public Works and Economic Development Act of 1965. Some States are conducting studies to determine whether their districts should encompass their whole Appalachian portion or concentrate on smaller multicounty areas.

The attached chart gives a summary of local development district activity State by State.

SEC. 302—LOCAL DEVELOPMENT-DISTRICT ACTIVITY

	Date 302(a) grants to State agencies expire	Multicounty districts established through fiscal year 1968 (18)	Estimated, fiscal year 1969 multicounty districts
Alabama	Feb. 23, 1969	State provides local planning service	1
Georgia	Nov. 29, 1968	5 local planning commissions in existence receive 302(a) assistance.	5
Kentucky	Nov. 22, 1968	3	4
Maryland	Oct. 30, 1968	State department of economic development operates field office.	1
Mississippi [1]			
New York	Aug. 1, 1969	State provides local planning assistance [2]	
North Carolina	Mar. 23, 1969	7	7
Ohio	Nov. 18, 1968	State maintains field office and provides technical assistance.	1
Pennsylvania	July 16, 1969	7	7
South Carolina	Dec. 28, 1968	State provides local planning assistance	1
Tennessee	Dec. 14, 1968	do	1
Virginia	Jan. 1, 1969	1	3
West Virginia	Jan. 28, 1969	State maintains 9 local field offices	6
Total			37

[1] Study contracted preliminary to establishment of development district(s) at the State and local level.
[2] Office planning coordination established 2 field offices which provide technical assistance through advisor ou

The local development districts represent an areawide bootstrap effort to effectively use all public and private resources for area development. The districts advise the States on local problems and priorities. They provide the leadership required locally to obtain local support for the funding of local development projects. In some cases, the States are moving to confer upon these districts additional powers, including the right to raise their own revenues and finance projects themselves.

For fiscal year 1969, the anticipated obligation for the local development district program is $1,561,000, which is $255,000 less than the estimated obligations for fiscal year 1968. The reduction results from the fact that in most States no further section 302 support will be provided for State-employed staffs.

During the first 2 years, section 302 funds were used to support State-employed staffs only. This was done in order that the States could establish a contiguous set of districts covering the entire region. This step prevented the haphazard development of scattered districts that would not encompass the region as a whole and lead to duplication and conflict in the local areas.

The following table indicates the obligations by States for 1966–67, the estimated obligations by States for 1968, and the requests for 1969. The fiscal year 1969 requests are based on the planned multicounty development districts requiring funding, and a final State-level grant to those States entitled to a final grant of support.

LOCAL DEVELOPMENT DISTRICTS, FISCAL YEAR 1966-69

	1966-67 actual	1968 estimated	1969 estimated
Alabama	$238,191	$190,000	$40,000
Georgia	87,338	67,000	41,000
Kentucky	213,212	181,000	160,000
Maryland	93,343	44,000	41,000
Mississippi	0	84,000	84,000
New York	100,999	136,000	137,000
North Carolina	181,066	116,000	106,000
Ohio	245,570	95,000	82,000
Pennsylvania	313,700	438,000	425,000
South Carolina	141,344	80,000	41,000
Tennessee	233,966	117,000	41,000
Virginia	207,325	100,000	123,000
West Virginia	339,209	168,000	240,000
Total	2,395,263	1,816,000	1,561,000

RESEARCH

The $1,550,000 requested for research for fiscal year 1969 includes $500,000 for Commission research, $550,000 for State research, and $500,000 to conclude the mine drainage pollution study which Congress directed the Commission to complete by March 1969.

The remaining request is for $150,000 for administration of section 302 (the local development district program and research).

The Applalachian research program was designed to provide an ever broadening base of information about the region and its problems so that public investments would reflect an increasingly sophisticated strategy of economic development. The object was to achieve not one pattern to be imposed on the entire region but a series of progressively detailed plans tailored to the needs and potential of the many areas that make up the region.

The first job was to establish a base of information leading to a better understanding of the trends and problems that characterized Appalachia and their relation to the national economy. More specifically, research was conducted to enable the Commission to make the best possible judgments about the expenditure of funds within the diffrent sections of the act. For example, use of research funds produced a substantial revision of the programs initially authorized by section 202.

As the State investment plans developed, other types of research provided vital information about industrial locational characteristics, growth projections for subregions, public facility requirements, and appropriate use of the region's recreational potential. It also became clear as the individual States identified problems which constrained their developmental activities, that more limited and detailed research was needed. Much of this is currently under way—a study of water quality requirements as they affect the development of Appalachian South Carolina; a study of North Carolina's educational and manpower needs; specifics about land available for development around the growth centers in Virginia; and an impact study of selected Appalachian development highway corridors in Maryland, Pennsylvania, West Virginia, and Ohio.

To continue this research program in fiscal year 1969 the following research areas are identified.

1. Mine Pollution Study

In the Appalachian Regional Development Act of 1967, Congress directed the Appalachian Regional Commission to carry out a survey and study of mine drainage pollution in the region with the objective of developing a comprehensive action program for the appropriate control, reduction, or elimination of such pollution and submit, with recommendations, a report to the President and Congress no later than March 31, 1969.

During fiscal year 1968, field studies of the source, extent and impact of mine drainage pollution was initiated. During fiscal year 1969 these studies will be analyzed and recommendations developed in cooperation with the Secretary of the Interior and relevant Federal agencies, appropriate State authorities, and an expert panel of the National Academy of Sciences and the National Academy of Engineering.

It is requested that $500,000 be made available during fiscal year 1969 to complete this study. The fiscal year 1968 and fiscal year 1969 budget requests for this study total one-third of the sum authorized.

2. Education

Because education in its many facets is the key to future development of the region, the Commission established in August 1966, an education advisory committee to assist in developing a coordinated program of investment tailored to the specific educational needs and problems of the region. Its work in relation to vocational education is discussed under section 211. In addition, the advisory committee will work with the office of education and academic institutions to explore the problems of: school financing, preschool programs, tuition waiver agreements between States, improvement of guidance and counseling services for Appalachian students, and the "pooling" of certain educational equipment and facilities among school districts.

3. Health

In 1966, a Health Advisory Committee was established to suggest criteria and guidelines for the Appalachian comprehensive demonstration health program. Working with the Public Health Service, the next job of the Committee is to develop specific project proposals to be funded in fiscal year 1969. They will also make recommnedations on: programs to deal with the acute shortage of health personel in the region; methods for more effective use of health funds, both public and private, available to the region; and any new Federal or State legislation which may be required to meet health problems of the region.

4. Manpower

The Commission, working with the Department of Labor, developed during fiscal year 1968 manpower projections indicating the future job market and occupational classifications for which Appalachian youths can compete in the region and in surrounding areas, providing they are provided appropriate skills and training.

Work began in fiscal year 1968 in several States to adjust the curriculums in vocational and technical schools in Appalachia to conform to this future occupational pattern and deemphasize declining occupations in agriculture. During fiscal year 1969, this work will be broadened and involve sessions with key State and local administrators in education.

5. Local Government

The organization and financing of local government is a primary problem impeding development in many areas of Appalachia. To the credit of the communities and the States, this problem has been recognized, and a variety of studies have been requested to help strengthen and modernize local administration in the region. Pennsylvania and Ohio began such studies during fiscal year 1968. West Virginia, South Carolina, and Georgia intend to carry this work forward in fiscal year 1969. The studies embrace such matters as intergovernmental contracts, consolidation, modernization of administrative machinery, and personnel reform.

6. Area Plans

The Commission staff is assisting the States by developing area plans addressed to endemic economic and social problems that are interstate in character, or by assisting them in developing special interstate growth opportunities.

The central Appalachian area of eastern Kentucky, southern West Virginia, southwestern Virginia, and northern Tennessee is receiving special attention. The area defined as "Central Appalachia" is composed of 60 counties in the States of Kentucky, Tennessee, Virginia, and West Virginia, and includes many of the poorest counties of the region. The primary emphasis of the central Appalachia study will be to prepare project applications for a coordinated series of Federal programs to be implemented in the region. Program emphasis is on pooling educational resources, manpower training, housing development, and urban services.

The Appalachian highlands area in the Blue Ridge and Allegheny Mountains has a special potential for joint Federal, State, and private recreational development. A plan for this whole area was begun in fiscal year 1968, and will be completed in fiscal year 1969.

7. State Research

Section 302 funds to support State-sponsored research will be employed to help the States in special efforts to find solutions to specific problems impeding devel-

opment in their areas. The Commission requires each State to assess priority problems retarding growth each year in their State Appalachian-developed plan.

During fiscal year 1968, the States have embarked upon a varied group of research projects addressed to their special problems. North Carolina is engaged in an attempt to determine its future needs and is attempting to convince educational officials to make appropriate modifications in curriculum for vocational schools. New York is preparing a comprehensive resource plan for its 14 Appalachian counties. Pennsylvania is developing recommendations for major reforms in local government organization and financing. Ohio is developing a major housing program. West Virginia is planning a major graduate center near Charleston. Virginia is engaged in an intensive land-use analysis in order to identify developable sites. South Carolina is preparing a comprehensive water facilities plan. Alabama is developing major plans for development in the Coosa River Valley.

Salaries and Expenses

PROGRAM AND FINANCING

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Federal cochairman and staff	179	179	213
	2. Appalachian Regional Commission administrative expenses	910	578	666
10	Total obligations	1,089	757	879
	Financing:			
15	Unobligated balance, lapsing	11		
	New obligational authority	1,100	757	879
	New obligational authority:			
40	Appropriation	1,100	746	879
50	Reappropriation		11	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	1,089	757	879
72	Obligated balance, start of year	170	231	231
74	Obligated balance, end of year	−231	−231	−231
77	Adjustments in expired accounts	−33		
90	Expenditures	994	757	879
	Expenditures are distributed as follows:			
01	Out of current authorizations	824	526	648
02	Out of prior authorizations	170	231	231

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	158	158	179
11.3	Positions other than permanent	50	----------	----------
11.5	Other personnel compensation	7	----------	----------
11.8	Special personal service payments	536	----------	----------
	Total personnel compensation	751	158	179
12.0	Personnel benefits	53	12	14
21.0	Travel and transportation of persons	42	9	15
23.0	Rent, communications, and utilities	112	----------	----------
24.0	Printing and reproduction	31	----------	----------
25.1	Other services	37	----------	5
25.2	Services of other agencies	42	----------	----------
26.0	Supplies and materials	15	----------	----------
31.0	Equipment	6	----------	----------
41.0	Grants, subsidies, and contributions	----------	578	666
99.0	Total obligations	1,089	757	879

PERSONNEL SUMMARY

Total number of permanent positions	10	10	10
Average number of all employees	9	10	10
Average GS grade	12.0	11.7	11.4
Average GS salary	$13,408	$10,162	$11,291

Mr. EVINS. Now, this is the Commission itself. This is a separate appropriation for the Appalachian Regional Commission.

Mr. FLEMING. As I indicated earlier this morning, there is an error here. The initial figure on that page should be $862,000 instead of $879,000. This is a $17,000 overage. It is just an error in arithmetic.

Mr. EVINS. Look at the chart on the following page, the second chart. You have the Federal cochairman with nine positions. You have the regional representative with two employees, employed by the State on a full-time basis here in Washington. That is 100-percent State funds, true?

Mr. FLEMING. That is right.

Mr. EVINS. The Governors support three positions here in Washington?

Mr. FLEMING. That is right.

Mr. EVINS. The Federal Government supports nine with a Federal cochairman. It would be 10 with a Federal cochairman?

Mr. FLEMING. That is right.

Then, as you are aware, the States pay half the cost of the Commission staff which is everything below those two boxes.

Mr. EVINS. The States pay one-half now of the remaining staff. Heretofore, the Federal Government picked up the entire tab.

When did they begin paying one-half?

Mr. FLEMING. The States began paying one-half July 1, 1967, the beginning of fiscal 1968. We developed this budget with the States, and they are committed to support this program level. They are now asking the legislatures for appropriations to cover that.

NUMBER OF EMPLOYEES

Mr. EVINS. Mr. Chairman, how many employees, overall, do you have, Federal and State, counting the three with the State?

Mr. FLEMING. The total would be 75.

Mr. EVINS. Your table shows 75 employees and that includes the three State employees?

Mr. FLEMING. I do not think that includes the three State employees. It would be 78.

Mr. EVINS. There are 75 Federal employees and three State?

Mr. FLEMING. No, sir; there are 10 Federal employees, three State employees and 65 commission employees. The Federal Government fully supports the 10, the State fully supports three and we split support of the 65.

Mr. EVINS. A staff of 78?

Mr. FLEMING. Yes, sir; the total request for the Federal contribution to the Commission's staff is $666,000. And the amended request for the Federal staff is $196,000.

Mr. EVINS. Where is this shown, Mr. Chairman?

Mr. FLEMING. It is shown in the salaries and expenses as well as in the initial part of the text.

Mr. EVINS. Federal cochairman and staff is $196,000?

Mr. FLEMING. Yes, sir.

Mr. EVINS. The Appalachian administrative expense?

Mr. FLEMING. $862,000.

Mr. EVINS. Do you have enough to do the job efficiently?

Mr. FLEMING. I think we have enough. When the Appalachian Act was passed, it was specified the Commission staff should be 65.

Mr. EVINS. Is this what the law provided originally?

Mr. FLEMING. There is no legal limit.

Mr. EVINS. But, it was projected it would be a staff of 65. You have 78 now.

Mr. FLEMING. We have stayed right with the original of 65 on the Commission staff. The others are Federal and State staffs.

PAY ACT INCREASE

Mr. EVINS. How much of the Pay Act increase were you able to absorb last year, 1968?

Mr. FLEMING. We absorbed all of it.

Mr. EVINS. What is planned for 1969?

Mr. FLEMING. I will call on Mr. Schmitt.

Mr. EVINS. The budgeted amount here includes the Pay Act increase for your employees?

Mr. SCHMITT. For the last pay increase, yes, sir.

Mr. FLEMING. That is right.

Mr. EVINS. Pay increases are included in that amount?

Mr. FLEMING. Yes, sir.

PUBLIC LAW 90–218

Mr. EVINS. How did the Public Law 90–218, the 2 percent cutback on your staff, affect the regional commission?

Mr. FLEMING. We have simply not filled about three principal vacancies that existed at the time the legislation was enacted. We would propose to fill them on the basis of this budget in 1969.

Mr. JONAS. The chart shows you have quite a lot of chiefs and few Indians.

Mr. FLEMING. Sort of high on the chief's side.

Mr. JONAS. You have 37 people, 10 super grades. That is pretty plush, is it not?

Mr. FLEMING. It would run high relative to an operating agency.

The reason for that is most of these people are professional economists, planners, lawyers or administrators of one variety or another as indicated here, because the Commission is not involved in the administrative work—in other words, we are not processing a contract between BPR and the State Highway Department.

Mr. JONAS. That is why you need your executive types.

Mr. FLEMING. We have fewer GS–5's, GS–7's and GS–9's than you would find in the average operating agency.

REAPPROPRIATION

Mr. EVINS. You have an $11,000 reappropriation. What is this for?

Mr. FLEMING. If I am not mistaken, I will ask the comptroller to check me, it was an $11,000 lapse in 1967.

Mr. SCHMITT. Unexpended dollars.

Mr. FLEMING. Unexpended at the end of the fiscal year. The authorization bill revived it and made it available for expenditure in 1968, and that has been figured in the budget.

Mr. EVINS. This is within the commission, for the commission's staff?

Mr. FLEMING. That is right.

Mr. EVINS. You found another $17,000 error in your figures and you want to make a further revision.

Mr. FLEMING. The $17,000 is a mistake in arithmetic. I cannot find what really prompted it.

Mr. EVINS. You want to reduce your budget then by $17,000?

Mr. FLEMING. That is right.

Mr. EVINS. What is this $11,000?

Mr. SCHMITT. That was a 1967 unexpended balance that was actually carried over to 1968.

Mr. EVINS. Does it require any action?

Mr. SCHMITT. No further action is required.

Mr. EVINS. Mr. Chairman, you have an important mission. When this act was passed originally it held out great promise.

Mr. FLEMING. Mr. Chairman, I appreciate the chance to present this case to you today.

Mr. EVINS. We want to commend you for your important work and for your mission.

Mr. FLEMING. I would like to say that there is always the contention here between trying to make maximum, effective use of a program and trying to get the money down too fast.

Mr. JONAS. We would like to start seeing some tangible results.

Mr. EVINS. You have your problem with 13 Governors, but they are pretty harmonious.

JUSTIFICATION MATERIAL

Mr. EVINS. We will insert your justification for "Salaries and expenses" at this point.

(Justification follows:)

SALARIES AND EXPENSES

Eight hundred and sixty-two thousand dollars is requested for necessary expenses for the Federal cochairman, for his alternate, and the payment of the Federal share of the administrative expenses of the Commission for fiscal year 1969.

For administrative expenses of the Commission other than those of the Federal cochairman, $666,000 is requested, an increase of $99,000 over the amount appropriated in fiscal year 1968. This increase results from the following increased costs:

Personnel compensation and benefits	$84,000
Rent and communications	36,000
Other services	78,000
Total	198,000

The Appalachian States share one-half of these increased costs, leaving a requested Federal share of $99,000.

The expenses of the Federal cochairman's office and staff are budgeted $213,000 which will support 10 people, including the Federal cochairman. It is the responsibility of this office to handle all the contacts and communications with the various Federal departments and agencies to implement the policies and decisions made by the Commission. The office includes three professionals, in addition to the Federal cochairman and the alternate cochairmen, and five secretaries.

Under the Appalachian Regional Development Act of 1965, the expenses of the Federal cochairman, an alternate and a small staff are paid solely by the Federal Government. Beginning July 1, 1967, however, the 13 States of the Appalachian region assumed responsibility for providing one-half the administrative expenses of the Appalachian Regional Commission.

Under the direction of an Executive Director, it is the responsibility of this technical staff to assist the Commission in meeting its responsibilities under the act.

The staff currently totals 52 persons with three vacancies. Of that number, 34 are professional economists, geographers, planners, health experts, and educational specialists. As previously indicated, 10 positions are charged against section 302 to administer the local development district and research programs. In fiscal year 1966 and fiscal year 1967 these services were provided to the Department of Commerce on a reimbursable basis from 302 funds. Three staff divisions have been established under the Executive Director.

The executive staff consists of the Office of the General Counsel and the Deputy Director.

The General Counsel is the chief legal adviser to the Commission and counsels the Federal Cochairman and the States as well. Under him are a Deputy Counsel, an Assistant Counsel which is currently vacant, and supporting clerical personnel. Because of the increased responsibilities of the Federal Cochairman and the Appalachian Regional Commission under the 1967 amendments to the Appalachian Regional Development Act, the General Counsel has assumed additional duties in the legal review of projects and proposals submitted to the Commission. He also serves as a principal adviser to the Federal Cochairman and the Commission on legislative matters.

While the position of Assistant Counsel has been left vacant in order to carry out the congressional directive under Public Law 90–218, requiring a 2-percent reduction in obligations for personnel costs, it appears essential to fill this position in order to effectively discharge the new responsibilities of the Commission under the recent amendments to the act.

The Deputy Director, who also serves as Secretary to the Commission, is responsible to the Executive Director for most of the administrative and housekeeping responsibilities of the Commission. He supervises the Comptroller, procurement operations, all supply, clerical, and support services, information and publication programs, and maintains the official files and minutes of all Commission proceedings. In addition, the Deputy Director supervises certain program responsibilities assigned to him, including the staff review of all Appalachian projects. Under the Deputy Director, the Comptroller serves as the Commission's chief fiscal officer and is responsible for all financial and accounting activities for both administrative and program operations.

The Planning Division is primarily responsible for all planning and research functions of the Commission as well as special program development activities in such fields as education, health, housing, transportation, and natural resources.

The position of Planning Director has been left vacant during fiscal year 1968 in order to carry out the directive under Public Law 90–218. So long as this position remains vacant, the Executive Director has assumed direct supervision of operations of this Division. This vacancy was created when the former Planning Director of the Commission was appointed Executive Director of the New England Regional Commission. Seventeen persons, 14 of whom are professionals, are assigned to this Division. In addition, there are three directors of special study staffs. The three study staffs are in the fields of education, health, and mine drainage pollution.

Congress directed the Commission to carry out the acid mine drainage study, under section 302 of the Act, and to submit a report to the President for transmittal to Congress by March 31, 1969. The Commission is requesting the assistance of a special panel of the National Academies of Sciences and Engineering to provide expert advise in the conduct of this study. In addition, appropriate Federal and State personnel will work with this special committee in directing the study. It is anticipated that one additional professional employee will be required in addition to the study director. The expenses of that employee, who will be temporary, will be funded under section 302 of the act.

The education staff, in addition to providing technical assistance to the States on educational matters, also services a special Appalachian Education Advisory Committee comprised of experts in the field of education. This committee is developing special recommendations in the fields of occupational preparation, preschool education, primary and secondary education, and higher education. In addition, the staff is reviewing special manpower needs in the region and developing recommended programs to supply additional personnel in those fields in which the region has critical manpower shortages.

The health staff is responsible for assisting the Commission in the administration of the section 202 demonstration comprehensive health program and works closely with the Public Health Service, State health agencies and local health officials, and private medical leaders in developing this pioneering program. Under the direction of an Appalachian Health Advisory Committee comprised of 26 experts in various health services, the staff is developing recommendations in such fields as child health, nutrition, environmental health, and in a number of categorical diseases which are endemic to certain parts of the region.

While the directors of both the health and education staffs are full-time Commission employees and are paid jointly by the Federal Government and the States, temporary staffs and consultants required by them in their studies are financed under section 302 of the act.

Two sections of the Planning Division, research and regional planning, are responsible for assisting the Commission in carrying out its responsibilities under sections 302 and 102 of the act.

The research section is currently engaged in carrying out special studies on migration in the region and has prepared definitive analyses of the economic problems in the 60 State planning districts of Appalachia. This work is now being used by the States in developing their fiscal year 1969 development programs. The research staff works closely with the States in preparing these plans. The research staff is also engaged in a program evaluation in order to determine the effectiveness of Appalachian and other Federal investments in helping to develop a self-sustaining economy. The results of this study will be completed by mid-April 1968.

The regional planning staff, under the direction of the States, is preparing comprehensive plans for two large areas of the region—one is Central Appalachia, a 60-country area in northern Tennessee, eastern Kentucky, southern West Virginia, and southwestern Virginia, where deprivation and underdevelopment are at their greatest. The first portion of this work has been completed and opportunities for development have been identified. The staff is now developing programs to be implemented prior to September 1968 in this 60-county area. Programs are in the fields of transportation, health, education, housing, and urban development. It is expected that by 1975 the population of Central Appalachia and employment opportunities in the 60-county area will come into balance and the long economic decline of the area can be reversed. The Central Appalachian plan is designed to assure the most effective use of all Federal, State, and

local resources in the 60 counties to promote development of the area and convert it from a welfare economy to one making its own contributions to national growth.

A second regional plan is being prepared for the Appalachian Highlands in seven States extending from north Georgia to southern New York. Most of this area is in Federal and State ownership and substantial Federal and State investments in recreation are being made there. The Appalachian Highlands plan is designed to assure that these public dollars will improve the local economies and have their greatest impact on the welfare of the region itself. The plan involves work by the Department on the Interior and Agriculture, the Bureau of Public Roads, the U.S. Corps of Engineers, Tennesse Valley Authority, and resource agencies in seven States.

The regional planning staff is also engaged in work with several States on plans to strengthen the administrative and financial structure of local government in several States. This work is concentrated in Pennsylvania, Ohio, and West Virginia. However, South Carolina, Georgia, and Alabama have also indicated that during fiscal year 1969 they desire to undertake similar efforts.

The Technical Assistance Division of the Commission staff works with the States and development districts in the actual implementation of Appalachian programs. Within this division is one section responsible for analyzing all projects submitted to the Commission for Appalachian assistance. It prepares appropriate recommendations to the Commission concerning approval or disapproval of each project. Approximately 450 projects are processed by this division each year.

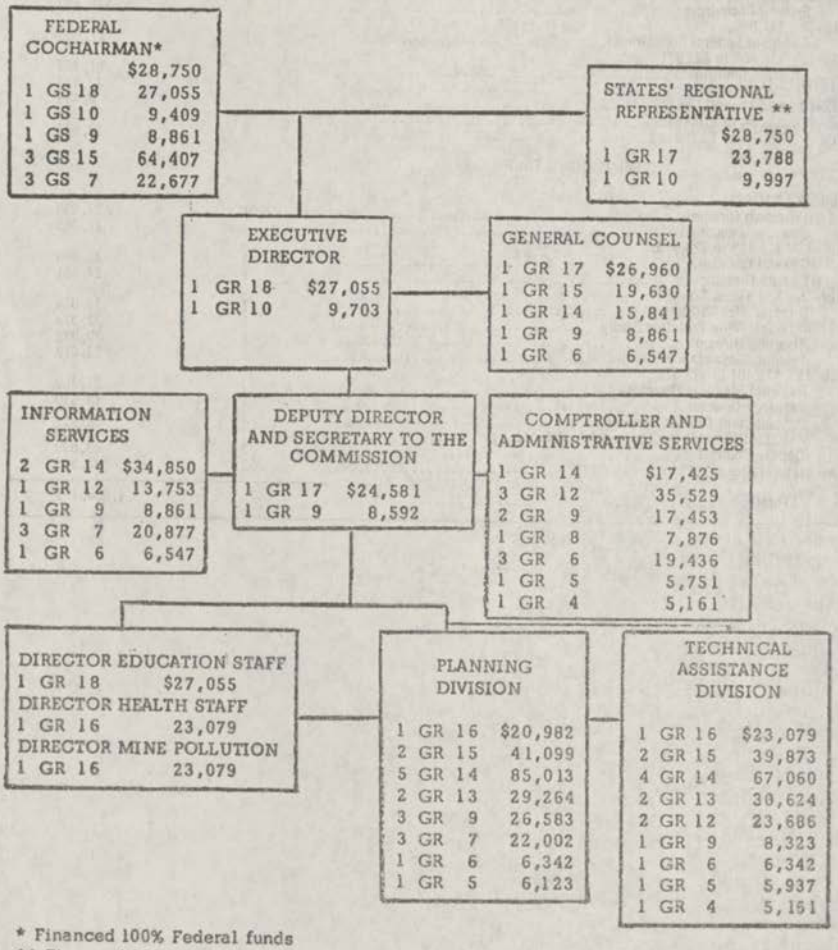
A second group of professionals in this division is responsible for working with the States in organizing and establishing development districts in the 60 planning districts of the region. After the districts are established, this staff provides technical assistance to them in planning their program. This section also is responsible to the Commission for the review of all financial and administrative questions involved in the implementation of the development district program.

This section is also responsible for providing broad technical assistance to the States and local governments upon request. The section is organized as a team of experts. One is well versed in housing and community planning; another in industrial development and industrial financing; another on State and local government administration and municipal finance. The remaining members of the staff are required to be intimately familiar with all Federal grant-in-aid programs and assist the States and communities on administrative or other problems involved with Federal grants-in-aid. This staff has been of invaluable assistance to numerous communities throughout the region and is now being used by the Federal agencies themselves to deal with special problems involved in Federal grants-in-aid in certain communities.

LISTING OF PERMANENT POSITIONS

	Number	Annual salary
FEDERAL EMPLOYEES		
Special positions at rates equal to or in excess of $27,055:		
Federal Cochairman	1	$28,750
GS–18 $27,055:		
Alternate Federal Cochairman	1	27,055
GS–15 $18,404 to $23,921:		
Program Coordinator	1	21,469
Special Assistant	2	42,938
GS–10 $8,821 to $11,467	1	9,409
GS–9 $8,054 to $10,475	1	8,861
GS–7 $6,734 to $8,759	3	22,677
COMMISSION STAFF		
GR–18 $27,055:		
Executive Director	1	27,055
Director, Education Staff	1	27,055
GR–17 $23,788 to $26,960:		
General Counsel	1	26,960
Deputy Director	1	24,581
GR–16 $20,982 to $26,574:		
Director, Health Staff	1	23,079
Director, Mine Pollution Study	1	23,079
Planning Director	1	20,982
Technical Assistance Director	1	23,079
GR–15 $18,404 to $23,921:		
Regional Planning Director	1	21,469
Research Director	1	19,630
Development District Specialist	1	20,243
Assistant Director for Technical Assistance	1	19,630
Deputy Counsel	1	19,630
All other grades	52	542,528
Total	75	1,000,159

APPALACHIAN REGIONAL COMMISSION
FISCAL YEAR 1969



* Financed 100% Federal funds
** Financed 100% State funds
All other categories financed 50-50 Federal-State funds except for 10 ARC staff positions chargeable 100% to Section 302 funds.

Statement on Appalachian Development Highway Program

Mr. Evins. Would you supply for the record a further statement on the status of the Appalachian development highway program?

Mr. Fleming. Yes, sir. We will provide that.

(The statement follows:)

The Appalachian Regional Commission,
Washington, D.C.

Hon. Joe L. Evins,
Chairman, Subcommittee on Independent Offices and HUD, U.S. House of Representatives, Washington, D.C.

Dear Mr. Chairman: When I appeared before your committee on February 27, 1968, regarding the appropriations for the Appalachian development highway program for fiscal year 1969, you asked that I give you a letter indicating the funds which will be needed to keep the program on schedule.

Since the Appalachian highway program was authorized, there has been a question as to whether the highway program was to be limited by the mileage authorized or the funds authorized for its accomplishment. As you are aware, $1.015 billion is now authorized for highways and access road construction. Of this amount, $940 million is earmarked for the development highway system which has an authorized ceiling of 2,700 miles. The latest cost estimates available for the entire system indicate that approximately $2.75 billion would be required to construct all sections of the designated corridors which are inadequate for present projected traffic. This estimate is based on work being done on approximately 2,571 miles. If Federal participation in such an undertaking were pegged at the statutory maximum of 70 percent, $2 billion in Federal funds would be required.

Obviously, the current authorization of $940 million is insufficient to support this level of activity. This became apparent in the spring of 1966 when uniform cost estimates were prepared by the State highway departments and the Bureau of Public Roads. At that time, the Appalachian Commission made the decision to obtain maximum mileage, and thereby maximum economic impact, through the selective application of the funds authorized on the highway segments which were least adequate for present or projected traffic. The funds authorized for the program were allocated among the participating States on the basis of mileage to be constructed and the matching ratio set at 70 percent Federal, 30 percent State on right-of-way engineering and two-lane construction, and at 50–50 for four-lane construction. The States have also been encouraged to apply State and regular Federal aid funds to projects on the Appalachian highway system.

The appropriation request for fiscal year 1969 is, therefore, related to the accomplishment of a construction program on the designated corridors involving the application of $940 million in Appalachian highway funds over a 6-year period—through fiscal year 1971. Present estimates indicate that this level of funding will permit the construction of 1,663 miles. Through fiscal year 1968, $370 million has been appropriated. Public Law 90–210 limits cumulative obligations through fiscal year 1968 to $316 million. As of March 1, 1968, $233 million was obligated on the development highway program. An appraisal made the first week in March indicates that the total obligations on the development highway program could reach $325,657,000 by the end of fiscal year 1968. Approximately $23,594,000 will be obligated on access roads and approximately $1 million for administration, leaving $293 million available for obligation on the development highway system.

Thus, the capacity of the States to do work on the system will exceed funds available by almost $34 million during fiscal year 1968. We anticipate that most, if not all, of the projects which this represents will proceed, financed 100 percent by the participating States, but qualified for reimbursement in fiscal year 1969 as permitted by section 201(h) of the Appalachian Regional Development Act, as amended.

The budget request of $125 million, coupled with the mandated carryover of $53,341,000, will permit a program level of $178,341,000 for fiscal year 1969. If the schedule I have outlined is maintained, approximately $34 million will be used for reimbursement to the States for projects contracted in fiscal year 1968, leaving approximately $145 million for obligation on new work in fiscal year 1969. This will bring the total obligations on the development highway and access

road programs to $495 million by the end of fiscal year 1969. Current estimates of Federal funds which could be employed in the construction of the designated system through fiscal year 1969 exceed this total by approximately $100 million.

As I indicated in my testimony before your committee, it is my intention to encourage the States to use the prefinancing provision in the law to make up this difference. Most of the participating States have indicated the willingness and ability to use this device to move the program forward. Completion of the program now authorized will, however, require an average appropriation of $260 million a year for fiscal year 1970 and fiscal year 1971.

I am enclosing several tables containing information compiled since the submission of the budget justification to you. They provide the most current picture of the Appalachian highway program.

I hope this information is helpful. If any further data would be useful, please let me know.

Sincerely yours,

JOE W. FLEMING.

APPALACHIAN DEVELOPMENT HIGHWAY PROGRAM—SUMMARY OF FINANCING

[In thousands of dollars]

State	Allocation of authorized funds	Allocation of appropriated funds	Obligations through Mar. 1, 1968	Estimated obligations through June 30, 1968	To be prefinanced
Alabama	18,149	10,800	5,754	10,800	
Georgia	190,320	60,000	46,270	65,823	5,823
Kentucky	48,078	12,000	11,738	12,000	
Maryland					
Mississippi	108,800	30,900	30,880	38,380	7,480
New York	49,541	17,600	14,999	20,817	3,217
North Carolina	57,246	17,500	13,922	23,083	5,583
Ohio	110,638	37,000	29,164	43,783	6,783
Pennsylvania	53,213	20,500	14,218	25,442	4,942
South Carolina	42,107	35,500	33,527	35,500	
Tennessee	261,908	50,200	32,551	50,200	
Virginia					
West Virginia					
Subtotal	940,000	292,000			
BPR Administration	5,000	1,000			
Total	945,000	293,000	233,023	325,828	33,828
Access roads (see next table)	70,000	23,650	13,633	23,594	
Grand total	1,015,000	316,650	246,656	349,422	33,828

APPALACHIAN ACCESS ROAD PROGRAM—SUMMARY OF FINANCING

State	Allocation of authorized funds	Allocation of appropriated funds	Obligations, Mar. 1, 1968	Estimated obligations, June 30, 1968
Alabama	$15,530,352	$8,780,000	$7,996,000	$8,771,000
Georgia	3,016,524	170,000	145,000	165,000
Kentucky	3,792,608	650,000	485,000	642,000
Maryland	1,706,949	260,000	33,000	257,000
Mississippi	6,059,984	2,770,000		2,769,000
New York	3,010,421			
North Carolina	3,495,389	70,000	23,000	65,000
Ohio	3,705,965	1,700,000	902,000	1,694,000
Pennsylvania	10,478,715	1,210,000	754,000	1,209,000
South Carolina	6,433,216	3,850,000	2,100,000	3,850,000
Tennessee	4,689,665	1,440,000	176,000	1,432,000
Virginia	2,709,053	680,000	677,000	677,000
West Virginia	5,371,159	2,070,000	342,000	2,063,000
Total	70,000,000	23,650,000	13,633,000	23,594,000

Mr. EVINS. Thank you, very much gentlemen.

Mr. FLEMING. Thank you.

MONDAY, MARCH 5, 1968.

OFFICE OF EMERGENCY PLANNING

WITNESSES

PRICE DANIEL, DIRECTOR, OFFICE OF EMERGENCY PLANNING
CHARLES BREWTON, ASSISTANT DIRECTOR, OEP
M. M. MERKER, GENERAL COUNSEL
WILLIAM B. RICE, DIRECTOR OF ADMINISTRATION
ROBERT Y. PHILLIPS, DIRECTOR, EMERGENCY OPERATIONS OFFICE
WILLIAM C. TRUPPNER, DIRECTOR, NATIONAL RESOURCE ANALYSIS CENTER
WILLIAM LAWRENCE, CHIEF, MATERIALS POLICY DIVISION, NRAC
EUGENE J. QUINDLEN, DIRECTOR, PROGRAM PLANNING AND EVALUATION
A. JAMES READ, BUDGET OFFICER
JAMES D. O'CONNELL, DIRECTOR, TELECOMMUNICATIONS MANAGEMENT

Mr. EVINS. The committee will come to order.

We have with us this morning our friends of the Office of Emergency Planning, headed by former Governor Price Daniel, of Texas, who is Director of the OEP. Mr. Charles Brewton is the Assistant Director, Mr. Merker is General Counsel, William B. Rice is Director of Administration, Robert Phillips is Director of Emergency Operations Office, and Mr. William C. Truppner is Director of the National Resource Analysis Center, and this is part of your reorganization.

Mr. William Lawrence is Chief of the Materials Policy Division, Mr. Eugene Quindlen is director of program planning and evaluation, and Mr. James Read is the budget officer.

That is a very distinguished group, and, Governor, we are always pleased to see you and hear you. You may proceed as you wish.

GENERAL STATEMENT

Mr. DANIEL. Mr. Chairman and members of the committee, it is indeed an honor and a privilege to appear before you today in support of OEP budget estimates for fiscal year 1969. As a former Member of the other body of the Congress, I take special satisfaction in renewing my association with the legislative branch. I believe that the budget document which you have before you provides a detailed justification of our requirements. Therefore, I shall concentrate on highlights of OEP accomplishments during the past year and on key features of our programs for the future. General O'Connell and members of his staff will discuss the telecommunications request separately.

Throughout recent months, the need for a strong emergency planning program has become increasingly evident as the Nation continues to meet the challenge of Vietnam without disrupting economic growth and prosperity here at home. OEP's contribution to the national security has, I believe, been an outstanding one, and it has been accomplished entirely within the appropriations enacted by the Congress for fiscal year 1968. Other than for pay raise costs for the civil defense and defense mobilization functions of Federal agencies appropriation, no supplemental funds are required for the current fiscal year.

Despite an exanding workload, our budget request for OEP salaries and expenses for fiscal year 1969 is only $343,000 larger than last year's appropriation, and that includes salary increases. Our fiscal year 1969 estimate will support a total staff of 270, an increase of four positions over the current fiscal year. The additional positions will further strengthen our National Resource Analysis Center in providing a first-rate scientific basis for determination of national security policy.

In our fiscal year 1969 budget request, as in our fiscal year 1968 estimates, no new contract research and development funds are sought. We will continue to perform the research function inhouse with the aid of specialized, highly trained consultants who are widely respected for their expertise in analysis of nonmilitary defense problems entailing economic and other considerations. We are requesting a small amount to insure the continuation of emergency preparedness studies by Federal agencies with a built-in competence.

We continue to fulfill our role as coordinator of the entire Federal Government nonmilitary preparedness program by providing policy guidance and leadership to the Federal departments and agencies, and by reviewing and evaluating program objectives and the effectiveness of program results. In this connection, you have scheduled for a later hearing our request for funds to cover the emergency preparedness functions of eight Federal departments and agencies which cannot be absorbed within their regularly appropriated funds.

In last year's budget presentation to this committee, we committed OEP to the development, refinement, and use of scientific methods for coping with a potential crisis or attack, related to the war in Southeast Asia or otherwise. I am pleased to report that our achievement in initiating a scientific analysis capability has been substantial.

During the past year, OEP has given particular attention to developing and maintaining a highly sophisticated capability for monitoring and projecting the status of the Nation's resources. Our National Resource Analysis Center analyzes the impact of military programs on the U.S. economy through use of econometric models and operations research techniques. Considerable progress has been made in improving the national economic strength model, an input-output economic model designed to estimate the effects of alternative combinations of Government actions on various industries.

STATE MANAGEMENT OF RESOURCES

In another important preparedness program, substantial progress was made in the development of State plans for the emergency management of resources. All 52 jurisdictions participating in the program have now completed and tested initial drafts of their resource management plans. Since our last appearance before this committee, 15 State plans have been approved for publication, bringing to 40 the total approved to date.

NATIONAL DEFENSE EXECUTIVE RESERVE

I am pleased to report that during the past year more than 1,400 executive reservists attended the Fifth National Conference of the National Defense Executive Reserve held in Washington, D.C., on

October 23–24, 1967. More executive reservists attended this training meeting than any of the four previous national conferences. They received instruction in current emergency procedures and heard top level officials speak on the importance of reservists' responsibilities. Addresses by Vice President Hubert Humphrey, Deputy Secretary of Defense Paul Nitze and General Maxwell Taylor highlighted the 2-day conference. The entire second day of the meeting was devoted to work sessions in which each reservist joined the members of his unit to consider problems they might face as Federal officials called to duty in an emergency. Eight Departments and agencies now sponsor 22 National Defense Executive Reserve units with close to 4,000 reservists participating in this important program for Government readiness.

STRATEGIC AND CRITICAL MATERIALS STOCKPILES

Turning now to the status of our stockpiles of 77 strategic materials, OEP maintains close surveillance over the materials that are stockpiled, and initiates new supply-requirements analyses whenever reviews indicate that the status of a particular material has changed or will change in the future. In fiscal year 1967, OEP completed a number of such analyses. Based on these new studies, revised stockpile objectives were established for nine materials.

Here, as in much of our work, we are planning and preparing for contingencies which we hope will never occur. However, we must be prepared for any eventuality. For instance, during fiscal year 1967 our office announced stockpile objectives in the event of a nuclear attack against the United States. That announcement represented a culmination of 3 years of study involving approximately 30 Federal departments and agencies. We also have set objectives for materials necessary for a conventional war short of nuclear attack against our Nation. Except for a few isolated materials, our stockpile objectives have been met and are maintained at a level sufficient to be prepared for either of these contingencies.

SUPPLY REQUIREMENTS STUDIES

During fiscal year 1968 we will complete new studies of supply-requirements in the event of conventional war against the United States. Based on these studies, we will develop revised conventional war stockpile objectives. This is a continuing matter, as I am sure the committee understands. In addition, special supply-requirements studies will be conducted for any material if there is an indication that the supply may be insufficient to meet the needs of the war in Vietnam.

Throughout the history of our stockpile program, changed conditions have reduced our objectives as to some materials and, therefore, have made possible the sale of excesses. Sales commitments for fiscal year 1967 amounted to $466.9 million. Cumulative sales commitments as of June 30, 1967, total approximately $2.7 billion at sales value, of which $2 billion were from the national and supplemental stockpiles and approximately $680.7 million from the Defense Production Act Inventory. For the first 6 months of fiscal year 1968, disposal sales commitments totaled approximately $85.3 million at sales value. As you know, these sales are handled by the General Services Administra-

tion which, I understand, has already testified before this committee concerning sales estimates for fiscal years 1968 and 1969.

STOCKPILE SURPLUS

Mr. EVINS. Governor, we understand that at one time we had about $10 billion in the stockpile of surplus materials and this committee for several years has urged, in view of the excesses, that there be a program of disposal. We have held hearings in the Congress on both sides regarding the disposal of certain of our stockpiled surpluses. The GSA and you have moved in that direction.

Now then, with the Vietnam war developing as it has, we wonder if there has been a changed policy, and if some items may be in short supply. Has your office taken a look at the requirements of the current situation?

Mr. DANIEL. Yes, we have. When you mention $10 billion, I do not think you meant to say that there was this much in excess. You were referring to the total in the stockpile.

Mr. EVINS. Yes.

Mr. DANIEL. There are $6.6 billion worth of materials there now and about $3.4 billion of that amount is in excess of our objectives.

Mr. EVINS. About half of the $6.6 billion is considered excess?

Mr. DANIEL. Yes, sir.

Mr. EVINS. Are we still disposing of materials even though we are in an emergency situation?

Mr. DANIEL. Yes, sir, we are. I am sure this committee knows how this occurred. Many years ago some materials such as lead and zinc were purchased and stockpiled in quantities. If they were not in excess of the actual needs then, they are certainly in excess of our needs as we see them today. And that is how the excesses were built up. About half of the materials, on a dollar basis or value, are still in excess.

Mr. EVINS. I think that was brought about by reason of the fact that originally we had a 5-year supply objective and that has now been reduced to what, 3?

Mr. DANIEL. To three. That is another reason that our objectives are lower now than at the time some of these purchases were made.

Mr. EVINS. But in any event, even with the emergency situation, you still consider that we have surplus in certain categories.

Mr. DANIEL. In some categories we do. Going back to your question, yes, sir, we certainly are keeping up with these materials and trying to see that we have on hand sufficient amount to take care of either of the contingencies I have just described to you.

Mr. JONAS. What are you doing about copper? Is that not critical?

Mr. DANIEL. Our objective on copper is about 775,000 short tons and we have on hand 259,000 short tons.

COPPER STRIKE

Mr. JONAS. What are we going to do if the strike continues?

Mr. DANIEL. If the strike continues, there is a possibility that some releases will have to be made. However, the office has a policy of not making releases from the stockpile while there is a labor dispute going on.

Mr. JONAS. Are you active in efforts to settle this strike?

Mr. DANIEL. Yes, sir.

Mr. JONAS. What can you tell us about the prospects?

Mr. DANIEL. As you know, the President has called all the representatives of the companies and the unions to meet at 4 o'clock today, and in his telegram he asked that they stay together and meet around the clock until some settlement of the strike is reached.

Mr. JONAS. What are the issues? Are they economic? I understood they were mostly jurisdictional.

Mr. DANIEL. I believe the biggest issue is companywide bargaining. The unions are insisting on companywide bargaining throughout the Nation and the companies are against it.

Mr. JONAS. Have you had to release any copper from the stockpile in this emergency?

Mr. DANIEL. Not since I have been here. We have previously made some releases.

Mr. JONAS. Not as a result of the strike?

Mr. DANIEL. Not as a result of the strike.

Mr. JONES. I imagine you are getting many calls though.

Mr. DANIEL. A lot of letters too.

Mr. EVINS. Governor, you tell them that we are concerned and hope to get this matter settled.

Mr. DANIEL. Yes, sir. We have been working with the President and the administration people in trying to get it over with.

CONTINUITY OF GOVERNMENT

In the important area of operational readiness of government at all levels, improvements were made this year with respect to emergency operating facilities and their supporting communications. We are continuing to work with the States to increase their capability to operate in an emergency and to insure continuity of Government. Forty-nine States have already adopted 276 constitutional amendments and legislative measures to accomplish these objectives.

In a related area, revision of the plan for the emergency broadcast system was completed through the combined efforts of the major networks, the Federal Communications Commission, the Office of Civil Defense and the Office of Emergency Planning. The system is operational and is tested monthly from various points in and away from Washington.

INTERNATIONAL ROLE

We are cooperating with other friendly nations on emergency preparedness. Following approval by the Canadian Cabinet, a new United States-Canada Civil Emergency Planning Agreement was effected by an exchange of notes, signed at Ottawa on August 8, 1967. The agreement establishes a framework within which the two nations can proceed with the development of mutually supporting emergency plans. We work continuously with the members of the North Atlantic Treaty Organization through our membership on the NATO Senior Civil Emergency Planning Committee. In addition, we are in the process of negotiating an exchange of notes with Mexico for the ex-

tension of mutual aid in case of crossborder disasters such as Hurricane Beulah.

DISASTER RELIEF FUND

In fiscal year 1967, in the field of disaster assistance, after major disaster declarations by the President, our Office allocated $21,755,000 to 14 States to reduce suffering and repair damages caused by major disasters. Thus far in fiscal year 1968, seven new disasters have been declared and aid in the amount of $32,026,000 has been allocated to State and local governments to supplement their efforts to overcome the havoc caused by these new disasters and those of prior years.

FEDERAL-STATE RELATIONS

Before concluding, I wish to mention the progress we are making in intergovernmental relations. In addition to OEP's numerous contacts with States resulting from our role in emergency readiness planning and disaster relief assistance, the Director has received an assignment from the President to serve as his liaison with the Governors on other matters involving Federal-State relations.

Our participation in Governors' Conferences, our trips to State capitals and our participation in State Days in Washington are all designed to bridge the communications gap that has sometimes existed between Federal and State officials. We have taken top-ranking troubleshooters from a score of executive agencies into statehouses in 42 capitals to identify and eliminate the old practices that qualify as red tape and that work to defeat the intent of the legislation enacted by the Congress. The State Days in Washington make up a new series of work sessions designed to follow up on the job of improving Federal-State working relationships. And in this program the Governor brings his officials here to meet with their Federal counterparts.

These meetings have involved more than 600 Federal officials and more than 2,000 State officials. Over 1,500 questions, problems, or complaints have been identified. More than half of these were answered or solved on the spot at these conferences, and the remainder have been attended to in follow-up actions, most of which have been entirely satisfactory to State officials. Some problems of course are continuing and still pending.

As one who has spent all of his 25 years in public service at the State level, except for 4 years in the Senate and 5 months in this office, it is my opinion that this program initiated by President Johnson has resulted in the finest working relationship between the Federal and State governments that has ever existed. I can praise this work without too much immodesty because most of it was inaugurated and established by my predecessors, Governor Buford Ellington and Governor Farris Bryant.

CONCLUSION

Back to our traditional duties, and in conclusion, I am convinced that OEP's contribution to the mobilization effort is an invaluable element in our Nation's total defense. As our past achievements readily demonstrate, a civil emergency preparedness program complements and supplements the Nation's military preparedness program for a

fraction of military defense costs. In light of the world situation today, I believe that our budget estimates for fiscal year 1969 represent a minimal investment in a nonmilitary defense program which will continue to produce benefits far in excess of its costs.

Mr. EVINS. It is a very fine statement, Governor. You have covered the highlights of your program. Of course, the Office of Emergency Planning is the nonmilitary preparedness agency of the Government, and sometimes overlaps into the military. With the Vietnam emergency, you are concerned with stockpiling critical materials.

PREPAREDNESS RESPONSIBILITIES AND PLANS

Tell us the status of your plans, Governor. We have been listening to reports of your predecessors for several years and they have been diligently working to keep the Federal Government and the States prepared.

What is the status of your plans now?

Mr. DANIEL. They require continuous study and updating to meet changed military and economic conditions.

Mr. EVINS. You have to constantly review and update them.

Mr. DANIEL. That is right. I think any plan the President might call for today, in any of these fields, we would have something ready to go. I do not mean just think about it; I am saying this positively, that we have something ready to go. But if you called a year from today we should have something better and even more up to date.

Mr. EVINS. Do you have plans for the continuity of Government in case of an emergency attack?

Mr. DANIEL. Yes.

Mr. EVINS. How many of the States have adopted emergency plans?

Mr. DANIEL. We have contracts for emergency resource planning in all States except Mississippi and Pennsylvania. These are contracts between the States and the Federal Government.

Mr. EVINS. Does each of the agencies of the Federal Government have their standby plans pretty firm?

Mr. DANIEL. Yes; I think that is correct.

Mr. EVINS. You are up on top of your job then, Governor?

Mr. JONAS. Of course, I am not advocating abolishing the office, I am not opposed to planning, but it does seem to me that you cannot have any more serious emergency than a nuclear attack. You already have your plans formulated as to what we will do at the State government level and the Federal Government level.

What else is there to plan?

Mr. DANIEL. You mean insofar as a nuclear attack is concerned?

Mr. JONAS. And conventional, too. You just said in your statement you had all of these cooperative arrangements made with the States, a number of constiutional amendments have already been adopted; 49 States have emergency plans. What more is there to plan? How can we have a greater crisis than a nuclear attack?

Mr. DANIEL. Actually, Mr. Jonas, there are conventional war plans and contingencies we are now taking into consideration that require more planning and preparedness in some respects than a nuclear war.

For instance, with respect to stockpiles, we find our objectives are higher in the case of conventional war than they would be in the case

of a nuclear attack on the country. The main thing there is that we do have to continuously prepare and plan with respect to stockpiles, continuity of Government, and so forth. With respect to all of these matters we have to face continuing military and economic change and keep our plans updated to meet changed conditions.

Mr. JONAS. That is what I cannot understand. I do not see what changed conditions you visualize that you do not already have blueprints for. You already have these blueprints. I understand you have to keep them current.

Mr. DANIEL. For instance, let's take stockpiles. We assumed that certain materials would be available from certain Western Hemisphere countries such as Cuba until Cuba went over to Castro and we had to strike it.

Mr. JONAS. That is about 6 years ago.

Mr. DANIEL. That is just an example. There are some other countries now that are getting away from us, getting to where it might be unsafe to count on them for some materials. On the other hand, it might be possible for us to rely more safely on countries outside this hemisphere for some materials. It is a matter of continually studying the situation in those countries, the shipping capabilities, what Defense says as to the possibility of having the shipping interrupted, and so forth. I know it probably seems to you——

Mr. JONAS. It seems to me once you get your plans made for both kinds of emergencies, thereafter it should be more of a streamlined operation. It does not take the same manpower to keep current as it does to formulate plans initially.

Mr. DANIEL. You have to have someone then to carry them out. If we did not have the Office of Emergency Planning, you would have to have some other agency available not only to keep them updated, but to carry them out and be ready to implement them when called for.

CIVIL DISORDERS

Mr. EVINS. We want to commend OEP for having these emergency plans prepared and ready.

I think you have one emergency condition I did not see alluded to in your justification. We know the OEP is concerned with all areas of planning and the committee is concerned to know what is being done with respect to the announced civil disobedience this spring in Washington. Is this under your jurisdiction?

Mr. DANIEL. That is not within our jurisdiction. I understand that consideration and work is being done on it by other agencies of the Government.

Mr. EVINS. We certainly hope it is in some areas. I hear the Mayor of Washington on television try to tell everybody not to be alarmed, but there is a great deal of concern. Fortunately, Washington has not had any of these riots like in Detroit, Newark, and elsewhere. But these announcements do not say they are coming to petition the Congress or petition the Government, which is a right they have under the Constitution. They also have the right to demonstrate and march, but they use the words "civil disobedience." When they use this phrase, I think the Justice Department and other areas of the Government ought to be concerned and do some planning.

Mr. DANIEL. I certainly share your concern and have satisfied myself that the Department of Justice and other agencies are taking action. It is not within our jurisdiction insofar as civil disobedience is concerned.

Mr. EVINS. I hope that you will take this under advice and contact your colleagues. You have great reaches into all agencies of the Government.

Mr. JONAS. If they burn down half the city, you would immediately have jurisdiction, would you not? All it would take would be an Executive order. I do not see how the Department of Justice can do that work. It would seem to me it ought to be assigned to you.

Mr. DANIEL. Well, sir, if the Congress wishes to assign it to us, we would certainly try to do the job.

Mr. JONAS. Do you agree an Executive order is all that would be required?

Mr. DANIEL. I am not sure about that. There is some difference of opinion among lawyers. In my opinion the way the law we operate under reads, as far as disasters are concerned, it applies to natural disasters and not manmade disasters or sabotage or things of that kind.

Mr. JONAS. Were you involved in rehabilitiation in Watts or Detroit?

Mr. DANIEL. No, sir. Our Office has not been involved.

Mr. EVINS. The Small Business Administration made loans, the Corps of Engineers provided assistance, and the Red Cross provided aid.

I suspect in all areas the Governors called upon the President through the Director of the Office of Emergency Planning to provide grants for at least the building of facilities.

Mr. DANIEL. Yes, indirectly, on requests coming in from the Governors who want to see if we cannot speed it along and cut the redtape. In that manner, we might have been involved. We are certainly involved in almost anything a Governor is asking for, just like you.

Mr. EVINS. The Attorney General is the chief law-enforcement officer. In the old days, if you prosecuted one man you set an example and one of the purposes was to retard others. I think the Attorney General should proceed with some actions to have a deterring effect.

But I just want to say, Governor, that an announced emergency is coming our way and I hope you will be prepared to give some assistance and cooperation and to urge your colleagues, also.

KERNER COMMISSION RECOMMENDATION

Mr. DANIEL. We certainly will do that, and you might have noticed that the Kerner Commission recommended that you amend the law to bring civil disturbances into the jurisdiction of this Office insofar as disaster relief is concerned.

Mr. TALCOTT. Do I understand the stockpiling in which you are involved is only for use in natural disasters and not conventional warfare disasters or civilian disorders?

Mr. DANIEL. No, the stockpiles are for use under certain contingencies such as nuclear war or conventional war. We do not draw on them for natural disasters.

Mr. TALCOTT. So you are stockpiling for war?

Mr. DANIEL. Yes.

Mr. TALCOTT. And your other activities are not for war?

Mr. DANIEL. Actually, our activities in natural disasters are simply the Federal Government paying for the repair of certain public facilities and emergency aid of that nature through the money you appropriate to the President for natural disasters.

Mr. TALCOTT. And none of this, as Mr. Jonas suggested, went into Watts?

Mr. DANIEL. None of this money went into Watts.

Mr. TALCOTT. Or any other locale of the civil disorders which we have had?

Mr. DANIEL. That is correct.

Mr. RICE. We operate under several pieces of legislation: The National Security Act of 1947, Defense Production of 1950, and Natural Disaster Act or Public Law 875. So there are different basic authorities.

Mr. TALCOTT. So it is your judgment that you just could not do anything so far as the pending civil disobedience projects are concerned?

Mr. DANIEL. Insofar as repairing public facilities through the President's disaster funds. That is my opinion. I ought to call it my personal legal opinion, having studied it.

Mr. TALCOTT. So you have not done any planning to help avoid or ameliorate this kind of disaster?

Mr. DANIEL. No, sir. The planning there is definitely outside of our jurisdiction. We have two things we are talking about here—planning to prevent them and whether or not there could be some disaster money used to repair damages afterward.

As far as preparing for the prevention of destruction of property here or anywhere else, other agencies of Government have that jurisdiction. There is no question about that. The only question on which there might be some difference is whether or not the disaster legislation under which the President can declare a major disaster would permit some of the funds you appropriate to him to go for the repair of public facilities damaged by riots. It has never been done, and in my opinion the way the act reads, you have not broadened the authority that much. It has been recommended to you by the Kerner Commission that it be done, and I think by others in the past.

Mr. TALCOTT. Governor, over 6 years ago we lost Cuba as one of our sources for some of our needs. You indicate that we might have lost some other countries since that time. Could you tell us what countries we have lost, either on the record or off the record.

(Off the record.)

Mr. EVINS. Back on the record.

Mr. MARSH. What is your total appropriation request. You indicated it was $343,000 over the preceding year.

Mr. RICE. We are asking for $5,043,000. That is on page 4.

Mr. MARSH. Actually, is it not $10,164,000?

Mr. RICE. Yes; to finance the three elements.

Mr. MARSH. So your total appropriation request is $10,164,000?

Mr. RICE. Right. This morning we have been talking about the first item.

Mr. MARSH. Your total request is $10,164,000?

Mr. RICE. Yes, sir.

Mr. MARSH. In addition to that, you have the disaster fund which is run separately?

Mr. RICE. Yes.

ECONOMETRIC MODELS

Mr. MARSH. I noted on page 3 of the Governor's statement the reference to econometric model, and in previous testimony here by the National Science Foundation reference was made to the kind of econometric model they were establishing. What cooperation do you have on this?

Mr. TRUPPNER. Actually, the National Science Foundation finances one professional man on the staff of the Natural Resource Analysis Center. They pay his salary and he operates as a full-time liaison to ensure cooperation.

Mr. MARSH. What is the econometric model?

Mr. TRUPPNER. These are simply models normally in the form of a program to be put on the computer to establish the financial and economic relationships that exist between different components of our industrial society.

Mr. MARSH. To what extent does OEP work with the new phase of the National Guard Bureau and the National Guard on military support for civilian defense?

Mr. RICE. Not directly at all.

Mr. MARSH. Thank you, Mr. Chairman.

RESULTS OF REORGANIZATION

Mr. EVINS. One more general question before we get into the details of the budget.

You had a reorganization in the Office of Emergency Planning during the last year. Do you want to tell us in a few words what you have done and what the results are?

Mr. DANIEL. Yes, sir. I have covered it generally there.

As you know, this reorganization was put into effect by my predecessor, Governor Bryant. And we feel it has given us a better, more streamlined operation.

Mr. EVINS. We will take a look at page 5. This shows you the present staffing of the Office of Emergency Planning.

Mr. DANIEL. Down on the left-hand corner you will see the National Resource Analysis Center. We gathered together there under Mr. Truppner the various divisions, some of which had been entirely separate—Materials Policy Division, Mobilization Plans, Economic Stabilization, Resource Evaluation, and System Evaluation. They have the computers here in this Center and this is where we have the scientists.

NATIONAL RESOURCE ANALYSIS CENTER

Mr. EVINS. You have had a reorganization and, as a result of the reorganization, you have some more jobs. The two places that go up are the National Resources Analysis Center, which goes up from 17 to 20 in 2 years and the Resource Evaluation Division, 18 to 22.

Mr. RICE. Yes, sir, but those are internal adjustments in 1968 sir. Between 1967 and 1968, the increases were just shifts within OEP. No aggregate increase.

Mr. EVINS. You have four new jobs.

Mr. RICE. Yes, for fiscal year 1969.

Mr. EVINS. Are these for the National Resource Analysis Center?

Mr. RICE. Yes, sir.

Mr. EVINS. Governor, you have plans for price controls and wage controls. Are those plans formulated? Would OEP participate in recommending such controls?

Mr. DANIEL. I doubt it would be our office alone that would recommend, but we have the plans ready and have had for years. I have seen to it that they are updated. And we have the plans ready if called for, but we would not likely be the only agency that would recommend when they be used. Like some of these other things we hope will never happen, if there are calls for, it is our responsibility to have the plans ready.

Mr. EVINS. Your Division of Economic Stabilization is concerned, I am sure, with economy matters of the Nation.

Mr. DANIEL. One of their main concerns would be having plans ready if ever needed.

ORGANIZATIONAL SETUP

Mr. EVINS. We will place in the record the organization chart and the one on the next page which shows the regional offices.

You have eight regional offices. Olney, Md., is for the Washington area and Thomasville, Ga., is for the Southeast.

Mr. DANIEL. We just swore in the new regional director for your region this morning, Bob Short, who has served under three Governors of Georgia.

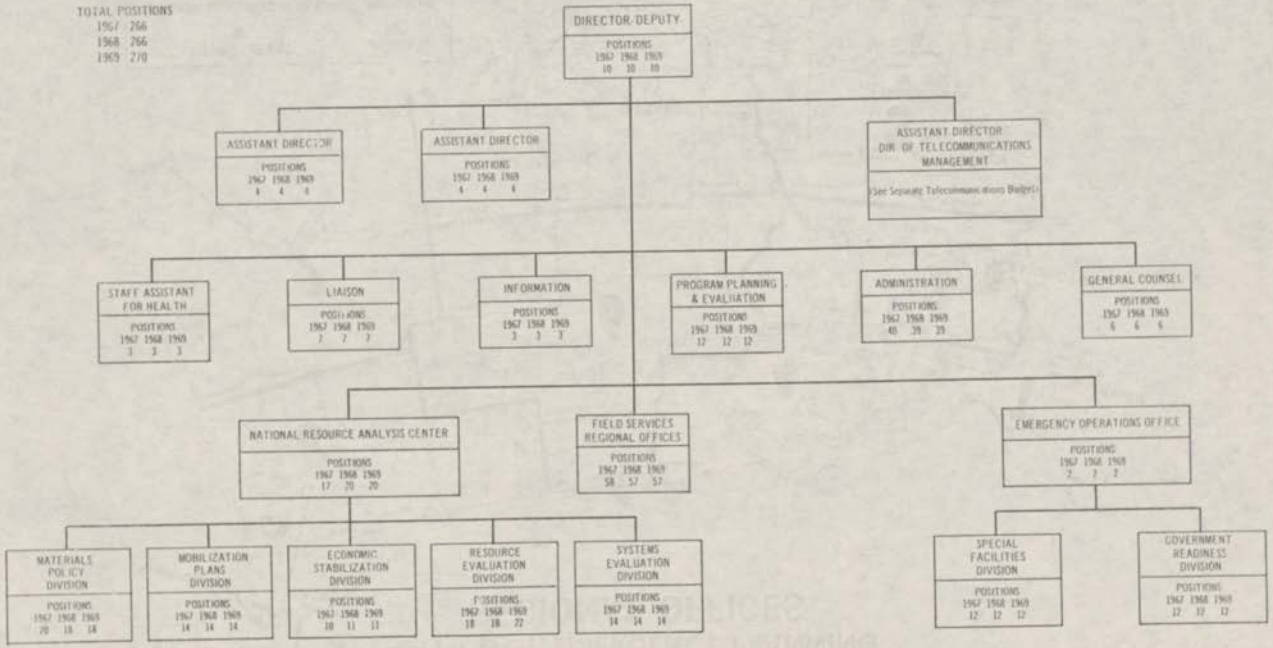
Mr. EVINS. We will place these in the record.

(The pages follow:)

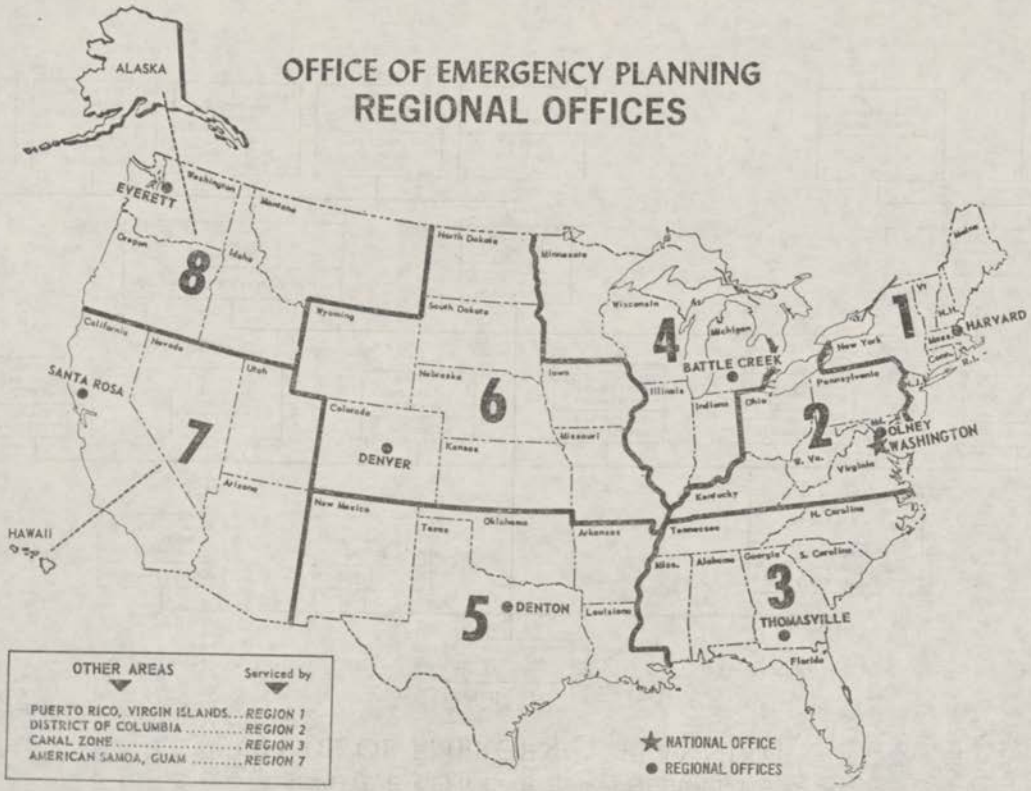
EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF EMERGENCY PLANNING

TOTAL POSITIONS
1967 266
1968 266
1969 270



Implemented
August 1, 1962


OFFICE OF EMERGENCY PLANNING
REGIONAL OFFICES
ALASKA
EVERETT
SANTA ROSA
DENVER
BATTLE CREEK
HARVARD
OLNEY
WASHINGTON
THOMASVILLE
DENTON
HAWAII
1
2
3
4
5
6
7
8
OTHER AREAS
Serviced by
PUERTO RICO, VIRGIN ISLANDS... REGION 1
DISTRICT OF COLUMBIA ..... REGION 2
CANAL ZONE ..... REGION 3
AMERICAN SAMOA, GUAM ..... REGION 7
NATIONAL OFFICE
REGIONAL OFFICES

SCARE ORDERS

Mr. JONAS. Recently I had occasion, Governor, to send you a document being circulated, I do not know how widely, around the country, but it is put out by some organization. It contains some scary Executive orders that contemplate taking over almost every function of the Government by the Executive. I sent it to you to give you the opportunity to respond to it. I have had some mail on it and I sent your response out and have not heard anything more about it. I think you ought to, in the record someplace, put the substance of your reply, or a statement explaining the purpose of those Executive orders, and that they are not in effect and are not planned to go into effect in the absence of a serious emergency, for reference by other Members of Congress who may be receiving similar mail.

Mr. DANIEL. I will be glad to do that.

Mr. JONAS. You think it is a good idea?

Mr. DANIEL. I will be glad to do it unless you think it will give it wider publicity for other kooks to pick it up and try to use it. When you said you had not heard anything further, you did not mean you had not received a reply? You did receive my reply?

Mr. JONAS. Yes. And I sent it out to the people who sent those things to me, two or three. Since your reply, I have not had any further communications on that subject. You are right, it might give more impetus to the thing.

Mr. DANIEL. All of those orders that they had printed up and sent to you were simply emergency planning orders to provide a state of readiness, if we had a nuclear attack, or if we had an all-out conventional war, or other condition of national emergency.

It is just like wage and price and rent controls. All authority to declare or put those into effect expired in 1953. We have the planning responsibility. The plans we have would have to come to the Congress. And because of the fact that we work on these plans continuously and we consult with the people in the retail and wholesale and other fields——

Mr. JONAS. We will just let it go this way as far as the record here is concerned; that the Executive orders to which reference was made are not in effect today and are emergency orders.

Mr. DANIEL. Some of them would probably require congressional action before they could be put into effect. Certainly they are intended for great emergencies. And I may say that our office has received letters like yours through the years from people who are still circulating these, although yours is the first one that I have seen in the 5 months I have been there.

FEDERAL-STATE RELATIONS

Mr. JONAS. Only one other general question.

On page 9 you say, "Over 1,500 questions, problems, and complaints were identified. More than half were answered and solved on the spot." I would like for you to give us some examples of what those problems were. If you cannot do it right now, would you prepare for the record when it comes down a half-dozen or so examples of the sort of thing you are talking about here?

Mr. DANIEL. Yes, sir; we will prepare some examples and put them in the record.

But right now I would say that one of the main things we ran into was so much redtape, long delay, in getting action on certain applications which had been filed by State agencies with the Federal agencies.

(The information follows:)

EXAMPLE OF FEDERAL-STATE COOPERATION

To obtain States' views during Congress' consideration of highway safety legislation, OEP arranged for the Highway Safety Committee of the Governors' Conference to meet with the President, Federal officials and appropriate committees of Congress. The proposed legislation was amended to provide that Governors and State officials should serve as members of the National Highway Safety Advisory Committee and the Traffic Safety Council. States' views are now continuously considered in developing nationwide safety standards.

Based on the views of Governors and State officials concerning the proliferation of agencies handling new grant-in-aid programs and in an attempt to minimize duplication and confusion in administering more than 400 separately authorized programs, OEP arranged for the Federal-State Relations Committee of the Governors' Conference to meet with the President, Cabinet members and key Federal officials administering grant programs.

Consequently, the President issued a number of directives, particularly those of September 5, 1967 and November 11, 1967, which required Federal agencies to conform to common planning boundaries as prescribed by Governors. Areas and districts are now required to be uniform within each State and in accordance with the Governors wishes. The directive of November 11, 1967, ordered Federal agencies to consult with State and local executives in the development and execution of programs affecting them. Budget Circulars A–80 and A–85 further assured advance consultation with the States in establishing common boundaries and in administering grant programs. Circular A–85 establishes a procedure through the office of the Advisory Commission on Intergovernmental Relations for clearing orders, regulations and directives with the States before they are promulgated.

Governors in 46 States have appointed special assistants or established departments to coordinate Federal-State relations, particularly grant programs in their States. Seventeen States now have Washington offices to work on Federal-State problems.

Through our good offices HUD was encouraged to make a $700,000 demonstration planning grant to Massachusetts. Staff employed by the grant will devote their attention to consolidating and coordinating Federal programs in Massachusetts to the end that they will effectively serve the State, its localities, and citizens. Results of this demonstration project will be made available to other States.

Inadvertently, a contract between the U.S. Office of Education and the Southern Education Reporting Service was terminated 6 months in advance with some embarrassment and financial loss to those participating in the Service; namely, some 18 newspaper editors and educational correspondents from six Southern States. As the request of the Governor of Tennessee and as a result of our efforts, negotiations were resumed, administrative errors corrected, and the contract renewed for the promised 6-month period.

In our conference with North Carolina officials, we were successful in releasing the Winston-Salem low-income housing project which was held up, expediting the 701 planning grant, lifting of an aircraft parking rule at the airstrip at Wright-Memorial Park and in obtaining a commitment from Department of Interior for a study of an airport at Ocracoke Island.

At the request of Washington State officials we assisted in the release of funds from DHEW for the operation of kidney centers.

Assisted the State of Iowa in winning approval of two of its manpower training programs.

Helped Connecticut get approval to use State appraisers for land acquisition under the land and water conservation fund program. An official of the Bureau of Outdoor Recreation notified the State within 3 weeks that State appraisers could be used and their use was encouraged for most acquisition projects. This

simplifies State procedures and cuts the State's costs of participating in the programs.

The OEP-sponsored Federal-State Relations Conference in Idaho provided the incentive needed to end the delay on a community action program in Nampa, Idaho, because of the representation on the CAP Board. Following the conference the OEO regional CAP manager returned to Idaho and worked out the problems. A new board was accepted, the program funded, and a director hired.

Approval of a work experience program (title V, Equal Opportunity Act) for Indians in the Standing Rock Reservation in North Dakota was hindered by the fact that two States and five counties were involved, making designation of the required single State agency extremely difficult. Through OEP the problem was brought to the attention of Federal officials by the State chairman of the Indian Affairs Commission. The HEW regional director was able to get agreement by the North and South Dakota State Welfare Departments on a single State agency sponsor for the program, effectively removing governmental hindrances at Federal and State levels to the program.

The OEP-sponsored Maryland conference revealed that the Neighborhood Youth Corps program was severely handicapped by apparent lack of funds for transportation and medical expenses for trainees. Subsequently, the Labor Department made funds available for these purposes and the program moved ahead.

As a result of visits to the States and OEP's working with them in general, problems common to most or all States came to the surface. For example, the need to give greater consideration to block grants and consolidation of related programs. Another example is the multiplicity of forms and certifications to prove compliance on civil rights. Interior now requires only that primary recipients of Federal funds keep on file satisfactory evidence of a subrecipient's compliance. For continuing programs, a single assurance is all that is required. HEW is in the process of creating a single Office for Civil Rights to serve the entire Department, and this office is also working to reduce the number of forms required. Half of the Office of Civil Rights staff will be in HEW regional offices so that communication with the States can be rapid and effective. In this, as in other instances, the States' comments have added impetus to work already underway.

Mr. JONAS. It disturbs me to read that 1,500 questions could be raised at State levels about operation and some of your people are able to solve them without even thinking about them. I just wonder whether I am right. I have been arguing that all of the brains in the United States are not in Washington.

Mr. DANIEL. I certainly agree with you on that, having just returned recently.

Mr. JONAS. I do not understand that the people in the States would have some problems your people could just answer off the cuff. That is why I asked for examples.

Mr. DANIEL. We will put in some examples, but let me clarify it right now in your mind. These questions involve many hundreds of applications that State officials have with their Federal counterparts on which they have had delays or redtape, many guidelines and conflicts in guidelines, that it may be the same general trouble affecting perhaps a hundred different applications.

Mr. JONAS. They were able to answer them off the cuff because they had come up before?

Mr. DANIEL. They had come up before and the Federal team could give them the answers when they really sat down and understood what the trouble was in more than half of all the problems raised. Really, a lot of it was due to misunderstanding.

Another thing that has been a chief concern and is still troubling us is the fact that so many of the agencies set up guidelines and regulations or change them without advance consultation with the States that are going to have to carry out these programs. The President has ordered all of the agencies now to give the Governors and the mayors

an opportunity to look for a 21-day period at changes in Federal regulations or guidelines or at new ones being proposed before they are put into effect. This is helping a whole lot, but sometimes they forget to do it or do not give the States adequate time. I do not think it is so much a matter of having the brains right ready to answer the questions as it is sitting across the table, identifying the problems and finally understanding what might be troubling the State agency, and being able to tell them here is the way to do it, and satisfy them.

Mr. EVINS. President Johnson has stated previously, and I have read in press releases, that there will be no program coming from Washington. They come to Washington through the local initiative and local management. The Federal Government may to a certain degree give assistance, but he has emphasized local leadership.

I believe at the recent Governors Conference the chairman of that conference made a statement that he had served under three different Presidents and to his experience there has been better cooperation and more done toward Federal-State relationships under this administration than in any previous administration.

I think the Office of Emergency Planning's cooperation with the States is one of your finest achievements. I commend you for it, Governor.

Mr. DANIEL. Thank you.

May I just add that the chairman of the conference is a Republican Governor.

BASIC AUTHORITIES

Mr. EVINS. I read the press reports to the effect that they were having better cooperation with the States, and I think this is probably the result of some of your activities.

Let us mention some of the statutes under which you operate.

The Office of Emergency Planning discharges its responsibilities in compliance with a series of statutes and Presidential orders, including the National Security Act of 1947, the Defense Production Act of 1950, the Federal Civil Defense Act, the Strategic and Critical Materials Stockpiling Act, the Federal Disaster Act, the Agricultural Trade Development and Assistance Act, the Buy American Act, Reorganization Plan No. 1 of 1958 as amended, and Executive Order 11051.

You list Executive Order No. 11051 and OEP Order 1100.8. Tell us about those three latter ones, Reorganization Plan No. 1, Executive Order 11051, and OEP Order 1100.8.

Mr. MERKER. The reorganization plan was the plan under which the Office of Defense Mobilization and the Federal Civil Defense Organization, and all of their functions were combined into a new agency and the authority delegated within that plan to the President. The President delegated all of the authority that came to him through the reorganization plan to the new agency, which at that time was called the Office of Civil and Defense Mobilization. We now have another name, the Office of Emergency Planning.

Mr. EVINS. The President took these various statutes and delegated some authority in creating the Office of Emergency Planning.

Mr. MERKER. Yes, sir.

It is statutory authority that has been delegated by the President to the Director of the Office of Emergency Planning.

Mr. EVINS. Tell us about the others.

Mr. MERKER. Executive Order 11051 is the Executive order which codified all of the authorities which we felt at that time existed in the Director of the Office of Emergency Planning. We felt it would be a good time to put together in one document all of the authorities that we have, and we recommended the Executive order to the President. So 11051 is an easy reference to all of the authority that is in the Director of the Office of Emergency Planning.

EXECUTIVE ORDER 11051

Mr. EVINS. Will you supply a copy of that for the record?
Mr. MERKER. Yes, sir.
(The information follows:)

EXECUTIVE ORDER 11051

PRESCRIBING RESPONSIBILITIES OF THE OFFICE OF EMERGENCY PLANNING IN THE EXECUTIVE OFFICE OF THE PRESIDENT

Whereas national preparedness must be achieved and maintained to support such varying degrees of mobilization as may be required to deal with increases in international tension, with limited war, or with general war including attack upon the United States; and

Whereas the national security and our continuing economic growth and prosperity are interdependent, appropriate attention must be directed to effective coordination of emergency preparedness measures with national economic policies and objectives; and

Whereas mobilization readiness and civil defense activities can be accomplished most effectively and efficiently through the performance by departments and agencies of the Government of those emergency preparedness functions related to their established roles and capabilities; and

Whereas responsibility for emergency preparedness involves virtually every agency of the Federal Government, and there is need to provide a central point of leadership and cordination in the Executive Office of the President:

Now, therefore, by virtue of the authority vested in me as President of the United States, including the authorities contained in the National Security Act of 1947, the Defense Production Act of 1950 (50 U.S.C. App. 2061 et seq.), the Federal Civil Defense Act of 1950 (50 U.S.C. App. 2251 et seq.), and other authorities of law vested in me pursuant to Reorganization Plan No. 1 of 1958 (72 Stat. 1799), and also including the authority vested in me by the provisions of Section 301 of title 3 of the United States Code, it is hereby ordered as follows:

PART I. SCOPE

SECTION 101. *Résumé of responsibilities.* The Director of the Office of Emergency Planning (hereinafter referred to as the Director) shall:

(a) Advise and assist the President in the coordination of and in the determination of policy for the emergency plans and preparedness assignments of the Federal departments and agencies (hereinafter referred to as Federal agencies) designed to make possible at Federal, State and local levels the mobilization of the human, natural and industrial resources of the nation to meet all conditions of national emergency, including attack on the United States.

(b) Under the direction of the President, be responsible for the preparation of nonmilitary plans and preparedness programs with respect to organization and functioning of the Federal Government under emergency conditions and with respect to specific areas of Federal activity necessary in time of war which are neither performed in the normal operations of the regular departments and agencies nor assigned thereto by or under the authority of the President.

(c) Perform such other functions as are vested in him by law or are by this order, or by orders referred to in this order, delegated or otherwise assigned to him.

(d) Perform such additional functions as the President may from time to time direct.

PART II. GENERAL COORDINATING RESPONSIBILITIES

SECTION 201. *General.* (a) The Director shall advise and assist the President in (1) the development of planning assumptions and broad emergency preparedness objectives with respect to various conditions of national emergency, (2) the development of policies and procedures to determine the relationship between available supplies of the nation's resources and the requirements of military, foreign, and essential civilian programs, including those of civil defense, (3) the development of policies, programs, and control systems designed to deal with supply deficiencies and to meet effectively the most urgent requirements for those resources in the interests of national defense, and (4) coordinating the governmental programs designed to achieve these ends.

(b) The Director shall advise and assist the President with respect to resolving any issues, related to emergency preparedness responsibilities of Federal agencies, which arise between two or more such agencies.

SEC. 202. *Resources and requirements.* The Director shall provide policy guidance to the heads of Federal agencies having resource mobilization or claimancy responsibilities to assist them in (1) the development and submission of estimated military and foreign as well as industrial and consumer requirements, (2) the development of resource supply estimates; and (3) the periodic evaluation of requirements estimates in relation to estimates of availability of resources from all sources.

SEC. 203. *Central program determination.* The Director shall develop an overall emergency system for reaching central program decisions for the utilization of resources on the basis that he will have the responsibility for making such central decisions in the initial period of an emergency. This system shall include uniform criteria and procedures for:

(a) The development by each Federal agency of the amounts and types of resources which it must claim in order to meet the requirements of its planned program;

(b) The central consideration of the supply-requirements evaluations of planned programs;

(c) The central determination of major resource utilization programs under varied conditions of national emergency on a relative urgency basis and central direction for the adjustment of agency programs consistent with such determinations; and

(d) The decentralized of controls if required by emergency conditions.

SEC. 204. *Control systems.* The Director shall develop policies and procedures for the coordinated application by Federal agencies, in time of emergency, of priorities, allocations, and other resource control and distribution systems (including a system for the rationing of consumer goods) for the conduct of approved major programs.

SEC. 205. *Research.* The Director shall develop, maintain, and conduct a central research planning program for emergency preparedness purposes. The Director shall maintain, with the participation and support of Federal agencies concerned, a national resources evaluation capability for predicting and monitoring the status of resources under all degrees of emergency, for identifying resources deficiencies and feasible production programs and for supplying resource evaluations at national and subordinate levels to support mobilization base planning, continuity of government, resource management and economic recovery.

SEC. 206. *Dispersal and protection of facilities.* (a) The Director, after consultation with the appropriate Federal agencies, shall advise the President concerning the strategic relocation of industries, services, government and economic activities, the operations of which are essential to the nation's security. He shall coordinate the efforts of Federal agencies with respect to the application of the principle of geographic dispersal of certain industrial facilities, both government- and privately-owned, in the interest of national defense.

(b) The Director, under authority of, and in accordance with the provisions of, Executive Order No. 10421 of December 31, 1952, shall perform functions in respect of the physical security of facilities important to the national defense.

(c) In addition, the Director shall review all measures being taken by the Federal agencies with respect to the physical security and protection of facilities important to defense mobilization, defense production, civil defense or the essential civilian economy, including those under the provisions of emergency preparedness assignments to such agencies and shall recommend to the President such actions as are necessary to strengthen such measures.

SEC. 207. *Civil defense.* (a) Under authority of the provisions of Section 2 of Executive Order No. 10952 of July 20, 1961, and as there prescribed, the Director shall advise and assist the President, and shall perform other functions, in respect of civil defense.

(b) Under authority of, and in accordance with the provisions of, Executive Order No. 10958 of August 14, 1961, the Director shall advise and assist the President with respect to the stockpiling of food and medical supplies.

(c) The Director shall advise and assist the President with repect to the need for stockpiling various items essential to the survival of the population, additional to food and medical supplies, and with respect to programs and for the acquisition, storage, and maintenance of such stockpiles.

SEC. 208. *Federal-State relations.* (a) The Director shall represent the President in working with State Governors to stimulate vigorous State and local participation in emergency preparedness measures.

(b) He shall provide advice and guidance to the States with regard to preparations for the continuity of State and local civilian political authority in the event of nuclear attack on the United States which shall include, but not be limited to, programs for maintaining lines of succession to office, safekeeping of essential records, provision for alternate sites of government, the protection and effective use of government resources, personnel, and facilities, and interstate compacts and reciprocal legislation relating to emergency preparedness.

(c) He shall assist the President in achieving a coordinated working relationship between the various elements of State governments and the Federal agencies to which specific emergency preparedness functions have been assigned pursuant to statute or Executive order.

(d) The civil defense activities involved in the functions prescribed by the foregoing provisions of this section shall be carried out in accordance with the provisions of Section 2 of Executive Order No. 10952 of July 20, 1961.

SEC. 209. *Review and evaluation.* The Director shall from time to time furnish the President overall reports and recommendations concerning the emergency preparedness programs, including the state of preparedness of Federal, State, and local governments to carry out their emergency functions.

PART III. SPECIAL EMERGENCY PLANNING RESPONSIBILITIES

SECTION 301. *General.* Under the direction of the President, the Director shall have primary responsibility (1) for planning assumptions and broad nonmilitary emergency preparedness objectives, (2) for planning the nonmilitary organization and functioning of the Federal Government in time of national emergency, (3) for developing, in association with interested agencies, the emergency planning, including making recommendations to the President as to the appropriate roles of Federal agencies, in currently unassigned matters, such as, but not necessarily limited to, economic stabilization, economic warfare, emergency information, and wartime censorship, (4) for planning for the emergency mobilization of telecommunications resources, and (5) for the development of nonmilitary policies and programs for use in the event of enemy attack on the United States designed to restore the national defense potential of the nation.

SEC. 302. *Emergency organization.* The Director, in consultation with the Director of the Bureau of the Budget, shall plan for the organization and functioning of the Federal Government in an emergency, including provisions for the central direction of all emergency mobilization activities and the creation of such emergency agencies as may be required for the conduct of emergency activities including those within the normal jurisdiction of existing agencies. Plans shall provide for maximum practicable reliance to be placed on existing Federal agences with competence in emergency operations and, as best may be, shall be harmonious with related operations of the Government as a whole.

SEC. 303. *Emergency authorities.* The Director shall provide for the prompt exercise of Federal emergency authority through the advance preparation of such proposed legislation, Eexecutive orders, rules, regulations, and directives as would be necessary to put into effect operating programs appropriate to the emergency situation.

SEC. 304. *Continuity of Federal Government.* The Director shall develop policies and plans to assure the continuity of essential Federal Government activities through programs to provide for lines of succession to office, safekeeping of essential records, alternate sites for Government operations, and the protection and effective use of Government resources, personnel, and facilities.

SEC. 305. *Executive Reserve.* The Director, under authority of, and in accordance with the provisions of, Executive Order No. 10660 of February 15, 1956, shall develop policies and plans for the provision of an Executive Reserve of personnel capable of filling executive positions in the Government in time of emergency.

SEC. 306. *Emergency telecommunications.* The Director shall be responsible for (1) planning for the mobilization of the nation's telecommunications resources in time of national emergency, and (2) carrying out, under the authority of, and in accordance with the provisions of, Executive Order No. 10705 of April 17, 1957, the functions thereby delegated or otherwise assigned to him.

SEC. 307. *Post-attack recovery.* Under the direction of the President, the Director, with the cooperation and assistance of the Federal agencies, shall develop policies, plans, and programs designed to provide for the rapid restoration after an attack on the United States of a national capability to support a strong national defense effort.

PART IV. CURRENT MANAGEMENT RESPONSIBILITIES

SEC. 401. *Defense production.* Under the authority of, and in accordance with the provisions of, Executive Order No. 10480 of August 14, 1953, the Director shall perform the functions thereby delegated or otherwise assigned to him.

SEC. 402. *Strategic and critical materials stockpiling.* (a) There are hereby delegated to the Director all those functions under the Strategic and Critical Materials Stockpiling Act (50 U.S.C 98 et seq.), under Section 4(h) of the Commodity Credit Corporation Charter Act (15 U.S.C. 714b(h)), and under Section 204(f) of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 485(f)), which were transferred to the President by the provisions of Reorganization Plan No. 1 of 1958 (72 Stat. 1799).

(b) The Director, under the provisions of the said Strategic and Critical Materials Stockpiling Act, shall determine which materials are strategic and critical and the quality and quantity of such materials which shall be stockpiled, and shall direct the General Services Administration in the purchase, storage, refinement, rotation, and disposal of materials.

(c) The Director is hereby designated as an agency under and for the purposes of the provisions of clause (b) of Section 5 of the Strategic and Critical Materials Stockpiling Act (50 U.S.C. 98d (clause (b)); and, accordingly, in the event of enemy attack upon the United States the Director is authorized and directed to order the release by the Administrator of General Services of such materials from stockpiles established under the said Act, in such quantities, for such uses, and on such terms and conditions, as the Director determines to be necessary in the interests of the national defense.

SEC. 403. *Supplemental stockpile.* The Director, under authority of the provisions of Section 4(d)(2) of Executive Order No. 10900 of January 6, 1961, shall determine from time to time the materials to be contracted for or purchased for a supplemental stockpile with foreign currencies pursuant to the Agricultural Trade Development and Assistance Act of 1954 (7 U.S.C. 1704(b)).

SEC. 404. *Imports threatening the national security.* (a) The Director, under the authority of, and in accordance with the provisions of, Section 2 of the Act of July 1, 1954 (68 Stat. 360; 19 U.S.C. 1352a), shall make appropriate investigations of the effects of imports on the national security and shall advise the President of any case in which the Director is of the opinion that an article is being imported into the United States in such quantities or under such circumstances as to threaten to impair the national security.

(b) The Director, under authority of, and in accordance with the provisions of, Section 3(d) of Executive Order No. 10582 of December 17, 1954, shall furnish advice to procuring agencies with respect to the rejection of bids or offers to furnish materials of foreign origin on the ground that such rejection is necessary to protect essential national security interests.

SEC. 405. *Disaster relief.* The Director, under authority of, and in accordance with the provisions of, Executive Order No. 10427 of January 16, 1953, and Executive Order No. 10737 of October 29, 1957, shall exercise authority under the Act of September 30, 1950, entitled "An Act to authorize Federal assistance to States and local governments in major disasters, and for other purposes" (42 U.S.C. 1855 et seq.).

SEC. 406. *Telecommunications.* Under authority of, and in accordance with the provisions of, Executive Order No. 10995 of February 16, 1962, the Director shall perform functions in respect of telecommunications.

PART V. GENERAL PROVISIONS

SEC. 501. *Rules and regulations.* In carrying out his responsibilities under this this order, the Director is authorized to issue such rules and regulations, and directives, consonant with law and Executive order, as he deems necessary and appropriate to the functions involved.

SEC. 502. *Boards and committee.* The Director is hereby authorized to establish in headquarters and in the field such boards and committees as he deems necessary to advise him in the conduct of activities outlined herein.

SEC. 503. *Certain additional authorities.* (a) There are hereby delegated to the Director all those now-existing functions under the National Security Act of 1947 which were transferred to the President by the provisions of Reorganization Plan No. 1 of 1958 (72 Stat. 1799).

(b) In performing the functions under the Federal Civil Defense Act of 1950 assigned to him, and subject to applicable provisions of Executive orders, the Director is authorized to exercise the authority conferred by Title IV of that Act. The foregoing provision of this subsection shall not be deemed to derogate from any authority under Title IV heretofore available to the Secretary of Defense.

SEC. 504. *Reports.* The Director is authorized to require from Federal agencies such statistical data and progress reports at such intervals as he deems necessary to discharge his responsibilities under this order.

SEC. 505. *Prior action.* All orders, regulations, ruling, certificates, directives, and other actions relating to any function affected by this order shall remain in effect except as they are inconsistent herewith or are hereafter amended or revoked under proper authority, and nothing in this order shall affect the validity or force of anything done under previous delegations or other assignments of the functions affected by this order.

SEC. 506. *Executive Order 11030.* Nothing in this order or in any order amended by this order shall derogate from the provisions of Executive Order No. 11030 of June 19, 1962.

SEC. 507. *References to orders and Acts.* Except as may for any reason be inappropriate, references in this order to any other Executive order or to any Act, and references in this order or in any other Executive order to this order, shall be deemed to include references thereto, respectively, as amended from time to time.

PART VI. PRIOR EXECUTIVE ORDERS AND PROCLAMATIONS

SECTION 601. *General amendments.* Each reference to the Office of Civil and Defense Mobilization or to the Director of the Office of Civil and Defense Mobilization in the following is hereby amended to refer to the Office of Emergency Planning and the Director of the Office of Emergency Planning, respectively:

(1) Executive Order No. 10296 of October 2, 1951
(2) Executive Order No. 10312 of December 10, 1951
(3) Executive Order No. 10346 of April 17, 1952 (penultimate sentence of Section 2, only)
(4) Executive Order No. 10421 of December 31, 1952
(5) Executive Order No. 10427 of January 16, 1953
(6) Executive Order No. 10480 of August 14, 1953
(7) Executive Order No. 10494 of October 14, 1953
(8) Executive Order No. 10601 of March 21, 1955
(9) Executive Order No. 10634 of August 25, 1955
(10) Executive Order No. 10660 of February 15, 1956
(11) Executive Order No. 10705 of April 17, 1957
(12) Executive Order No. 10737 of October 29, 1957
(13) Executive Order No. 10900 of January 5, 1961
(14) Executive Order No. 10952 of July 20, 1961
(15) Executive Order No. 10958 of August 14, 1961
(16) Proclamation No. 3279 of March 10, 1959

SEC. 602. *Executive Order 10242.* Executive Order No. 10242 of May 8, 1951, is hereby amended:

(1) Bl deleting from subsection 101(a) thereof the following: "upon the Director of the Office of Civil and Defense Mobilization, hereinafter referred to as the Director,".

(2) By deleting from Sections 101(c), 101(d), 102, 103, 104, 106 (preamble), 201, and 301 the following: "upon the Director of the Office of Civil and Defense Mobilization".

(3) By substituting for the words "the Director of the Office of Civil and Defense Mobilization", at each place where they occur in the order and are not deleted or otherwise amended by this order, the following: "the delegate of the President".

(4) By substituting for the words "shall not be delegated" in subsection 101(d) the following: "shall not be redelegated by the delegate of the President".

(5) By adding after Section 106 new Sections 107, 108, and 109, reading as follows:

"SEC. 107. The words 'the delegate of the President' as used in this order:

"(1) In respect of functions under the Act delegated or otherwise assigned to the Secretary of Defense, mean the Secretary of Defense.

"(2) In respect of functions delegated or otherwise assigned to the Director of the Office of Emergency Planning, mean the Director of the Office of Emergency Planning.

"SEC. 108. The authority conferred by Section 401(a) of the Act to employ part-time or temporary advisory personnel deemed necessary in carrying out the provisions of the Act, and delegated by the provisions of Section 101(a) of this order, shall be available as follows: (1) To the Secretary of Defense in respect of not to exceed eighty personnel (including not to exceed twenty subjects of the United Kingdom and Canada), and (2) to the Director of the Office of Emergency Planning in respect of not to exceed twenty personnel (including not to exceed five subjects of the United Kingdom and Canada).

"SEC. 109. The relevant provisions of this Part shall be subject to the provisions of the Memorandum of the President, pertaining to conflicts of interest, dated February 9, 1962 (27 F.R. 1341 ff.)."

(6) By amending Section 401 to read as follows:

"SEC. 401. The approval of the President is hereby given for the employment of retired personnel of the armed services, pursuant to the provisions of subsection 401(a) of the Act as follows: (1) By the Secretary of Defense, not to exceed twenty persons, and (2) by the Director of the Office of Emergency Planning, not to exceed five persons."

SEC. 603. *Other orders.*—(a) Executive Order No. 10260 of June 27, 1951, is hereby amended by striking from Section 1 thereof the following: "Office of Civil and Defense Mobilization, the".

(b) Executive Order No. 10346 of April 17, 1952, is hereby amended by substituting for the reference therein to the Director of the Office of Civil and Defense Mobilization, and for each reference therein to the Office of Civil and Defense Mobilization except that in the penultimate sentence of Section 2, the following: "the Office of Emergency Planning or the Department of Defense or both, as may be determined under the provisions of appropriate Executive orders".

(c) Executive Order No. 10421 of December 31, 1952, is hereby amended by inserting before the period at the end of Section 3(b)(9) thereof a comma and the following: "including recommendations as to actions necessary to strengthen the program provided for in this order".

(d) Executive Order No. 10529 of April 22, 1954, is hereby amended by substituting for each reference therein to the Director of the Office of Civil and Defense Mobilization the following: "the Director of the Office of Emergency Planning or the Secretary of Defense or both as may be determined under appropriate Executive orders".

(e) Executive Order No. 10582 of December 17, 1954, is hereby amended by striking from Section 3(d) thereof the words "from any officer of the Government designated by the President to furnish such advice" and by inserting in lieu of the stricken words the following: "from the Director of the Office of Emergency Planning. In providing this advice the Director shall be governed by the principle that exceptions under this section shall be made only upon a clear showing that the payment of a greater differential than the procedures of this section generally prescribe is justified by consideration of national security".

(f) Executive Order No. 10789 of November 14, 1958, is hereby amended by striking from Section 21 thereof the words "Office of Civil and Defense Mobilization".

SEC. 604. *Superseded orders.*—To the extent that the following have not heretofore been made or become inapplicable, they are hereby superseded and revoked.

(1) Executive Order No. 9981 of July 26, 1948
(2) Executive Order No. 10219 of February 28, 1951
(3) Executive Order No. 10269 of July 6, 1951
(4) Executive Order No. 10438 of March 13, 1953
(5) Executive Order No. 10461 of June 17, 1953
(6) Executive Order No. 10524 of March 31, 1954
(7) Executive Order No. 10539 of June 22, 1954 (without prejudice to final liquidation of any affairs thereunder)
(8) Executive Order No. 10638 of October 10, 1955
(9) Executive Order No. 10773 of July 1, 1958
(10) Executive Order No. 10782 of September 6, 1958
(11) Executive Order No. 10902 of January 9, 1961

JOHN F. KENNEDY.

THE WHITE HOUSE, *September 27, 1962.*

Mr. EVINS. Tell us about 1100.8.

Mr. RICE. I might answer that.

That simply formalizes the reorganization instituted under Governor Bryant and sets forth the organizational structure.

Mr. EVINS. You had an internal reorganization under Governor Bryant and this order sort of formalized it.

Mr. RICE. It is an internal OEP order.

Mr. EVINS. This justification language says:

The Office of Emergency Planning assists the President in directing the national nonmilitary defense effort, whose primary aim is to create and maintain a preparedness to meet all contingencies from limited war to all-out nuclear attack on the United States. The total security of the United States requires a military and nonmilitary preparedness which complement and supplement each other. To successfully wage war and respond or recover from attack require a predeveloped capability to make immediate and maximum use of remaining resources and to mobilize the entire economy to meet whatever national goals are determined by the President and the Congress. True nonmilitary preparedness also assures the continuation of civil control of government at all levels under the most extreme conditions.

This is the concept in which we believe.

Then you state that considerable progress was made in the analytical capacity to provide a more scientific basis for policy decisions. How are you doing this? Good commonsense is what we need in this office.

CONTINGENCY ANALYSIS

Mr. DANIEL. Through our computer system we now have a capability that we have not had in the past.

Do you want to say anything more on that, Mr. Truppner?

Mr. TRUPPNER. I think I might add to that simply that we have succeeded in recruiting a number of rather distinguished scientists to join us and provide us with their help. And I hope they have commonsense too.

Mr. EVINS. We are not discounting scientists, but in case of emergency we have not got the time for scientific research.

Mr. TRUPPNER. No, sir; this is on the planning side.

Mr. DANIEL. That is where we are doing it now.

Mr. EVINS. OEP's overall system for nonmilitary defense includes development of alternative approaches to preparedness problems presented for top-level decisions. Emergency preparedness involves Federal, State, and local government, as well as the private sector of our economy and the individual citizen.

The patriotic individual citizen will respond to good leadership.

Do you deal with industry much, Governor?

Mr. DANIEL. Yes, through the executive reservists and certain other fields where we prepare for these contingencies we hope will never occur. We do deal directly with industry in those programs.

Mr. EVINS. You state here that in response to the current military and economic situation, OEP has increased the emphasis on preparedness for contingencies short of nuclear war. What about the latter?

You testified earlier that you have given some of your attention to the case of nuclear war.

Mr. DANIEL. Yes, we have.

Mr. EVINS. So you are already making studies and plans in the event of either?

Mr. DANIEL. Both.

As you know, the thinking now is that the former is more likely to occur than the latter. We base all of this on military judgments. We hope they are right.

Mr. EVINS. The military has been carrying us around the corner for some time now.

Mr. JONAS. May I pursue that one step further?

Mr. EVINS. Mr. Jonas.

Mr. JONAS. The military does not tell you we are in danger or there is any real likelihood of any conventional attack on the United States, on the continental United States. Are they not talking about the danger of conventional wars around the world being greater than nuclear wars? But there is not any real probability that we are going to be subject to a conventional attack in the United States?

Mr. DANIEL. No, sir; I have not heard of any.

You know what I am referring to, I am sure. The fact that most of the military people feel that with a nuclear capability in many countries, if we get into a bigger war it is more likely to be a conventional war than a nuclear war. Therefore the emphasis is on the contingency of conventional war.

As I told you, we do find, as far as our objectives in stockpiling and some other things, that the conventional war requires more than a nuclear war.

Mr. JONAS. Sure, because you have to ship a lot of goods out of the country, but your plans would be quite different about survival from a nuclear attack and survival from a conventional attack on the continental United States.

Mr. DANIEL. Plans and needs would be quite different. It was hard for me to figure out at first, but I understand it now because so much of this country would be destroyed if we actually had a nuclear attack.

APPROPRIATION REQUEST

Mr. EVINS. Looking at the appropriation item on page 4, you had $4.7 million in 1967, $4.7 million in 1968, and you are asking for $5,043,000 in 1969, which is an increase of $343,000 over last year.

How much of the Pay Act did you absorb this year?

Mr. RICE. We have absorbed $133,000 of it for fiscal year 1968.

Mr. EVINS. You have absorbed the Pay Act increase for 1968.

Mr. RICE. Yes, sir.

Mr. EVINS. But you are asking for a net of $210,000 for 1969; is that correct?

Mr. RICE. For increased pay purposes and four new positions.

Mr. READ. The increase is spelled out, Mr. Chairman, on page 9.

Mr. EVINS. You are coming up with a net increase of $210,000; is that correct?

Mr. READ. Yes, sir.

Mr. EVINS. Your increase is $204,000 for increased employment, pay raise annualization, and four new positions; $15,000 for increased personnel benefits, $1,000 for increased travel.

Then you make reductions of $11,653 for contract research and $8,000 reduction for fewer security clearances.

Telecommunications is $1.6 million for fiscal year 1967, $1,945,000 for 1968, which is an increase over the previous year, and for 1969 you have increased it to $1,986,000.

Then you have civil defense and defense mobilization functions of Federal agencies, $4 million in 1967, down to $3,135,000 for 1969.

Total appropriations for the Office of Emergency Planning is $10,164,000, plus the $15 million for disaster relief.

DISASTER RELIEF ALLOCATIONS

Mr. JONAS. On page 4, you show funds appropriated to the President for disaster relief of $24,550,000 in 1967, $20 million in 1968, and you are asking for $15 million in 1969, but on page 8 of your statement you said in 1967 you allocated $21,755,000, and so far in 1968 you have allocated $32,026,000. That adds up to $53,781,000.

Where did you get the money?

Mr. RICE. The figures in page 4 are what was actually appropriated.

Mr. JONAS. You had carryover funds?

Mr. RICE. We had carryover funds from previous years. For example, 1966 was a large year.

JUSTIFICATION SUMMARY

Mr. EVINS. We will place in the record page 4.

(The page follows:)

EXECUTIVE OFFICE OF THE PRESIDENT, OFFICE OF EMERGENCY PLANNING

APPROPRIATION SUMMARY

Appropriation	1967 actual	1968 actual	1969 estimate
OEP: Salaries and expenses	$4,700,000	[1] $4,700,000	$5,043,000
Telecommunications: Salaries and expenses	1,600,000	1,945,000	1,986,000
Civil defense and defense mobilization functions of Federal agencies	4,000,000	[2] 3,000,000	3,135,000
Total appropriated to OEP	10,300,000	9,645,000	10,164,000
Funds appropriated to the President, disaster relief	24,550,000	20,000,000	15,000,000

[1] This amount does not include $133,000 due to increased pay costs of Public Law 90-206. Congressional authority is being sought to transfer $15,000 from "Salaries and expenses, telecommunications" and $118,000 from "State and local preparedness."

[2] This amount does not include $102,000 due to increased pay costs of Public Law 90-206 for which a supplemental appropriation is anticipated.

Salaries and Expenses

Mr. Evins. Your chart on page 10 is a breakdown for several years. It shows an increase of four jobs, from 266 to 270, and an increase of $219,000 for personnel. Place pages 8 through 11 in the record.

(The pages follow:)

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimated	1969 estimated
	Program by activities:			
	1. Resource evaluation and readiness	1,996	1,993	2,093
	2. Government readiness	438	435	450
	3. Federal-State relations	1,007	1,014	1,049
	4. Executive direction, programing, staff and administrative support	1,394	1,401	1,451
	Total program costs, funded	4,835	4,843	5,043
	Change in selected resources [1]	−248		
10	Total obligations	4,587	4,843	5,043
	Financing:			
21	Unobligated balance available, start of year	−66	−10	
22	Proposed transfer of unobligated balance from other accounts for civilian pay act increases		−118	
24	Unobligated balance available, end of year	10		
25	Unobligated balance lapsing	139		
	New obligational authority	4,670	4,715	5,043
	New obligational authority:			
40	Appropriation	4,700	4,700	5,043
41	Transferred to other accounts	−30		
43	Appropriation (adjusted)	4,670	4,700	5,043
46	Proposed transfer from other accounts for pay increases		15	
	Relation of obligations to expenditures:			
71	Total obligations affecting expenditures	4,587	4,843	5,043
72	Obligated balance, start of year	810	555	525
74	Obligated balance, end of year	−555	−525	−490
77	Adjustments in expired accounts	−15		
90	Expenditures	4,827	4,873	5,078
	Expenditures are distributed as follows:			
01	Out of current authorizations	4,827	4,318	4,553
02	Out of prior authorizations		555	525

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	Personnel compensation:			
11.1	Permanent positions	3,475	3,702	3,901
11.3	Positions other than permanent	125	140	143
11.5	Other personnel compensation	19	17	19
	Total personnel compensation	3,619	3,859	4,063
12.0	Personnel benefits	260	278	293
21.0	Travel and transportation of persons	134	152	153
22.0	Transportation of things	8	8	8
23.0	Rent, communications, and utilities	109	106	106
24.0	Printing and reproduction	37	38	38
25.1	Other services	123	72	60
25.2	Services of other agencies	247	282	274
26.0	Supplies and materials	39	38	38
31.0	Equipment	11	10	10
99.0	Total obligations	4,587	4,843	5,043

PERSONNEL SUMMARY

Total number of permanent positions	266	266	270
Full-time equivalent of other positions	11	12	12
Average number of all employees	265	270	276
Average GS grade	11.3	11.4	11.4
Average GS salary	$13,621	$14,580	$14,758

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $440,000 (1967 adjustments; $110,000); 1967, $302,000; 1968, $302,000; 1969, $302,000.

SALARIES AND EXPENSES

APPROPRIATION AND PERSONNEL HISTORY RECORDS

Period	Positions	Man-years	Obligations			Unobligated balance	Total appropriation
			Compensation and benefits	Other objects	R. & D. contracts		
Fiscal year 1962	500	464	$5,167,401	$2,503,271	----------	$217,328	[1] $7,888,000
Fiscal year 1963	390	378	4,415,786	757,484	----------	66,730	5,240,000
Fiscal year 1964	260	299	3,682,000	429,000	$110,000	9,000	4,230,000
Fiscal year 1965	250	248	3,438,000	492,000	161,000	14,000	[2] 4,070,000
Fiscal year 1966	266	249	3,570,000	933,000	243,000	211,654	[2][3] 4,955,000
Fiscal year 1967	266	254	3,879,000	651,000	57,000	139,017	[2] 4,700,000
Fiscal year 1968	266	255	4,137,000	696,000	10,000	----------	[2][4] 4,700,000
Fiscal year 1969	270	264	4,356,000	687,000	----------	----------	5,043,000

[1] See the following table:

Appropriated to OCDM	$25,000,000
Transferred to other agencies	17,112,000
Balance remaining in OEP	7,888,000

[2] Totals do not add due to carryover of no-year funds.

[3] Includes $86,000 transferred to "Civil Defense and Defense Mobilization Functions of Federal Agencies" as authorized by Public Law 89-426, May 13, 1966.

[4] This amount does not include $133,000 due to increased pay costs of Public Law 90-206. (See appropriation summary.)

Relation of fiscal year 1968 program to fiscal year 1969 program

APPROPRIATION BASIS

Fiscal year 1968 appropriation	$4,700,000
Fiscal year 1969 request	5,043,000
Fiscal year 1969 increase	+343,000
Actual cost of pay increase in fiscal year 1968	133,000
Net change	+210,000

Fiscal year 1968 cost of pay raise will be absorbed pending transfer authority of available funds from other accounts.

OBLIGATION BASIS

Fiscal year 1968 obligations	4,842,653
Fiscal year 1969 obligations	5,043,000
Fiscal year 1969 increase	200,347

Details of increase:

Increased man-years of employment, annualization of 1968 pay raise, and 4 new positions	+204,000
Increased personnel benefits	+15,000
Increased travel	+1,000
End of contract research program	−11,653
Fewer security clearances	−8,000

FINANCIAL AND PERSONNEL SUMMARY

Office	1967 actual		1968 estimate		1969 estimate		Change, 1968-69 (obligations)
	Positions	Obligations	Positions	Obligations	Positions	Obligations	
National Resource Analysis Center	93	$1,448,290	95	$1,618,285	99	$1,736,959	+$118,674
Emergency operations	26	362,935	26	390,569	26	401,144	+10,575
Field services-regional offices	58	860,981	57	892,652	57	911,854	+19,202
Program planning and evaluation	12	204,323	12	209,696	12	203,968	−5,728
Administration	40	424,829	39	419,669	39	437,459	+17,790
General Counsel	6	83,726	6	89,120	6	99,615	+10,495
Staff assistant for health	3	35,360	3	40,968	3	51,112	+10,144
Information	3	46,005	3	48,655	3	49,111	+456
Liaison	7	116,223	7	132,949	7	140,650	+7,701
Executive direction	18	296,071	18	294,437	18	324,128	+29,691
Total, personnel compensation and benefits	266	3,878,743	266	4,137,000	270	4,356,000	+219,000
Other objects		652,076		696,000		687,000	−9,000
Subtotal		4,530,819		4,833,000		5,043,000	+210,00
Research contracts		56,620		9,653			−9,653
Total obligations		4,587,439		4,842,653		5,043,000	200,347
Unobligated balance		139,071					
Total appropriation, OEP salaries and expenses		[1] 4,700,000		[1] 4,833,000		5,043,000	[1] +210,000

[1] Totals do not add due to carryover of no-year funds. 1968 total assumes enactment of transfer authority to cover increased pay costs. (See appropriation summary.)

OBLIGATIONS BY OBJECT CLASS

Object class	1967 actual	1968 estimate	1969 estimate	Change 1968/69
11 Personnel compensation	$3,618,728	$3,859,000	$4,063,000	+$204,000
12 Personnel benefits	260,015	278,000	293,000	+15,000
21 Travel	134,294	152,000	153,000	+1,000
22 Transportation of things	8,014	8,000	8,000	
23 Rent, communications and utilities	109,056	106,000	106,000	
24 Printing and reproduction	37,317	38,000	38,000	
25 Other services	122,516	71,653	60,000	−11,653
Services of other agencies	247,346	282,000	274,000	−8,000
26 Supplies and materials	38,692	38,000	38,000	
31 Equipment	11,461	10,000	10,000	
42 Insurance Claims				
Total Obligations	4,587,439	4,842,653	5,043,000	+200,347

National Resource Analysis Center

Mr. Evins. Let's just take a brief look at your various programs. Your National Resources Analysis Center provides executive direction and general management in your resources preparedness. You go up from 95 to 99 jobs. You do forecasting. What can you forecast?

Mr. Daniel. Will you answer that Mr. Truppner?

Mr. Truppner. Rather than use the word "forecast," I would prefer to say——

Mr. Evins. That is what you have in your budget. You say you do forecasting.

Mr. Truppner. Yes, sir. I was going to explain. We project various contingencies and develop the governmental responses to deal with the problems that would arise from a projected contingency. Now, in order to lay the basis for such a contingency, one has to forecast such

things as the size of the economy, the gross national product, and the like. So this really provides the basis for a contingency planning which is our major business.

IMPORT INVESTIGATIONS

Mr. EVINS. You maintain a national resources evaluation capability for monitoring the status of our resources. You conduct investigations and continued surveillance of imports that threaten to impair the national security. What have you done here?

Mr. DANIEL. When we are called on to conduct a hearing as to whether the national security is imperiled by reason of any specific import, that duty and responsibility falls on us, to conduct the hearing, but simply from the standpoint of the national security aspect of it.

Mr. JONAS. When are you going to make a decision on the textile case? This case has been pending for several years. It seeks to have a determination made as to the importance of the textile industry to the national security. But you won't act on it.

Mr. DANIEL. If you will go on to the next question, I will answer that in just a few minutes. I want to review my notes because I did look into it, figuring you might bring it up. But I do want to give you the accurate information.

Mr. JONAS. Good.

Mr. MARSH. Will the gentleman yield before you leave that question?

Mr. JONAS. Yes.

IMPACT OF KENNEDY ROUND

Mr. MARSH. What is going to be the general impact of the recent Kennedy round at Geneva on not only textiles but chemicals, shoes, fish, and other products that are vital to the national economy? Representatives of these industries indicate that they are going to be adversely affected, and other Federal agencies involved in these cases indicate that also, for example the Bureau of Commercial Fisheries.

Mr. DANIEL. That is an area in which I am not really able to testify. In other words, I am not able to testify on the effect of these on the economy.

Mr. MARSH. By that I mean from the standpoint of maintaining our national capability to produce these products for our own national consumption. For example, the shoe industry indicates that they may lose a substantial capability in the production of shoes. The fish industry indicates that they may lose a substantial capability in the production of fish, which relate to the food and fiber and national sustenance of our own citizens.

Mr. DANIEL. Mr. Truppner, do you have an answer to that question?

Mr. TRUPPNER. Yes, sir.

Mr. MARSH. Is this Mr. Jonas' question about textiles?

Mr. TRUPPNER. No, sir. This is in response to your question.

Mr. MARSH. But textiles fit in?

Mr. TRUPPNER. Yes, textiles fit in here, in general.

Under section 232 of the Trade Expansion Act, the Director of the OEP is responsible for concerning himself with the imports of particular materials or products which affect the national security by adversely affecting the domestic industry that produces those materials or products.

I might mention in connection with the textile case that events rather overtook us in that case because while we did conduct the investigation, the administration took so many actions that were responsive to the request, in the first place, that in effect it would have required, I believe, a resubmittal of the case and a complete updating. In any case, that whole investigation is totally outdated now and the administration has taken a great many of the actions that were requested to alleviate the problems that were described. Consequently, I would say events simply overtook us.

TEXTILE CASE

Mr. JONAS. Isn't it a fact that the case filed before you sought to have a determination made that the textile industry is an essential industry to the national security of the country?

Mr. TRUPPNER. Yes, sir.

Mr. JONAS. Why don't you make a decision on that?

Mr. TRUPPNER. I think the question is whether or not the imports so adversely affected an important industry that the result of the imports would have impaired our national security.

Mr. JONAS. That is right. That is why they want you to make a determination.

Mr. TRUPPNER. My point was that a number of the actions which the industry requested the administration to make were actually taken.

Mr. JONAS. The industry contends that the situation is deteriorating and has deteriorated constantly.

Mr. TRUPPNER. What I am trying to say, sir, is that I think this would require a reopening, a reexamination of the case rather than a simple updating of an out-of-date analysis which simply does not have very much application to 1968.

Mr. DANIEL. Mr. Congressman, let me say that I asked this same question. Being relatively new on the job, I know nothing about it except what has been reported to me. Having reviewed my notes, I want to add something to the answer Mr. Truppner has given.

The complaint, or the request for investigation was filed in 1961. The evidence was put on by the industry and other interested parties, and in 1962 President Kennedy tried to bring about some multilateral agreements for limiting the imports of cotton textiles. Many of the things complained of were solved by these agreements that were worked out. At least, much of the evidence and many of the facts complained of were completely changed.

According to the records of our office, the industry did not update its case after the November 1962 actions, and has never done so since that time. The evidence that was taken in 1961 is so far out of date that it would be impossible to base a decision on it as to whether or not the national security is adversely affected as of today.

Mr. JONAS. I can certainly understand that, but has the industry been informed or invited to update this material?

Mr. DANIEL. They have been informed, so I understand, because inquiries have been made.

Mr. JONAS. I understood that no answer had been made by OEP.

Mr. DANIEL. I doubt that, though I have been there only 5 months.

Mr. JONAS. I asked your predecessor that same question last year, and he smiled and said that there are a lot of ramifications. I took it to mean that one of them came from the State Department. A lot of things that were entering into this picture were preventing a determination from being made. I am glad to hear you say, if I understand you correctly, that the office will be glad to consider this matter if the industry wants to update the case, file a petition for a new hearing.

Mr. DANIEL. Yes, sir; mainly the updated evidence.

Mr. WYMAN. Would you yield?

Mr. JONAS. Yes.

FOREIGN IMPORT PROBLEMS

Mr. WYMAN. Governor, the criteria that face industry and the questions that they have to go into in preparing a new position in relation to 1968, would involve different factors, would it not, than for Congress on the economic side of quota restrictions?

Mr. DANIEL. Yes, that is correct. Some of the same questions would have to be answered in both cases because the economic effect does, of course, enter into what might happen to the national security. In other words, if it is going to put mills out of business, if that is the economic effect, it would be a threat to the national security. So some of the same evidence would have to be made in both instances.

Mr. WYMAN. That is what bothers me. The other day a lot of Members attended a meeting in which the textile industry pointed out the development of the situation in which just that kind of a picture is presented, not only are they going to be cut back in terms of what they can sell here but they are receiving assaults from foreign imports. Then I go over and see the same thing from the shoe industry, where they have imported shoes selling here that are made overseas for 40 cents an hour, which they can sell here at $8, and which in this country we cannot even make for $8, we cannot even come close to making them for $8. Now, it seems to me, it would be helpful, and if you do not have it now you could supply it for the record, I would be grateful to know what kind of a case in terms of points must the industry prove to you to get you to take some action here.

TRADE ACT REGULATIONS

Mr. DANIEL. We will try to submit something for the record that will be helpful on that. Mr. Merker, will you do this?

Mr. MERKER. Yes.

Mr. MARSH. Will the gentleman yield?

Mr. WYMAN. Yes.

Mr. MARSH. It seems to me at this point that inasmuch as this is the Office of Emergency Planning the potential loss of a substantial American industry that produces food or fiber or materials vital to the na-

tional survival is an emergency for which the Office of Emergency Planning should be planning. You would agree to this, would you not?

Mr. DANIEL. Yes. We do have certain jurisdiction there. But really as far as our office coming into the picture, there are other agencies that would have the jurisdiction unless it is an application, a complaint that the national security is being adversely affected, and a request that our office conduct a hearing on that aspect of it. Otherwise, you would have to go to the Tariff Commission or someone else.

Mr. MARSH. What power do you have to act?

Mr. DANIEL. We just make a finding.

Mr. MARSH. So you cannot enforce your finding, anyway?

Mr. DANIEL. Not at all. We just make the finding and make a recommendation to the President.

Mr. JONAS. But Mr. Marsh's point is that shoes and uniforms are only slightly less important to an army than guns.

Mr. DANIEL. Yes, sir.

Mr. JONAS. I thought you already had all this information as to our needs in the event of an emergency and whether we can supply them in this country or not. Also, what it would do to the national security if you closed down the entire domestic shoe industry or the textile industry or they are driven out of business.

Mr. DANIEL. We have information on which we could come to a conclusion on that under this procedure that has been set up by Congress itself, gentlemen. Let me say as a Member of the Senate I voted the way you are talking here this morning and made some fights in that direction.

Mr. JONAS. Off the record.

(Discussion off the record.)

Mr. DANIEL. Our powers for making a determination under this national security provision are set forth by the Congress. Therefore, to make that determination and make a recommendation we have to follow what you set out in the statute. As far as making other judgments, as to what our needs are going to be or as to how many plants might be knocked out if we had a nuclear attack, those kind of things, we do keep that information gathered and updated. We get it mostly from other agencies, however. Mr. Truppner, is that a fair statement?

Mr. TRUPPNER. Yes, sir; it is a correct statement.

Mr. WYMAN. Governor, don't you see anything in the nature of an emergency in the drafts which segments of these industries present to Congress showing an absolute flood of foreign imports, putting people out of work in this country and creating a situation where we cannot sell our products—some of them, not all of them—in competition with foreign products? Isn't that an emergency? Don't these same plants have to make uniforms, as the chairman and Mr. Jonas have said, and shoes? Don't we have to or shouldn't we, as a matter of emergency planning, take such economic steps as are necessary to keep a minimum number of our industries alive even if they have to have an indirect subsidiary by some kind of restriction on foreign imports?

Mr. DANIEL. Yes. I think it could become of emergency proportions, but there are a lot of emergencies that our office does not make plans for. To get our office into this act, the procedure as set forth by the Congress would be for an application to be filed under Public Law 87-794 alleging that the national security was endangered by these specific imports. Then this office would make its finding and recommendation.

Mr. WYMAN. That is why I asked you if the gentleman to whom you turned could sort of outline for the record what points they would have to establish. Maybe they cannot make this kind of a case so as to invoke your functions. But it would be helpful to know what they have to prove in order to get you into the act.

Mr. DANIEL. Yes. We will supply that. Mr. Merker will give you something on it right now.

Mr. MERKER. We have regulations which set forth the elements that ought to go into a petition. We do not mean that they have to be controlling but they are a guide. If these elements are followed, it would be in the nature of a prima facie case, enough for us to look into it and make an investigation. We will place a copy of those regulations into the record.

Mr. WYMAN. Thank you.

REGULATION UNDER SECTION 232 OF TRADE EXPANSION ACT OF 1962

Mr. DANIEL. I might say that Congress has made it clear that in the administration of this section of the act that I have referred to, that the Director and the President shall further recognize the close relation of the economic welfare of the Nation to our national security and shall take into consideration the impact of foreign competition on the economic welfare of individual domestic industries. We will supply you with the regulations, and I think they will answer your question.

Mr. WYMAN. Thank you.

(The information follows:)

[Reprinted from the Federal Register, Friday, Jan. 4, 1963 (28 F.R. 122)]

TITLE 32A—NATIONAL DEFENSE, APPENDIX

CHAPTER I—OFFICE OF EMERGENCY PLANNING

OEP Reg. 4—Regulations under section 232 of the Trade Expansion Act of 1962

Sec.

1. Authority.
2. Definitions.
3. General.
4. Criteria for determining effects of imports on national security.
5. Applications for investigation.
6. Confidential information.
7. Conduct of investigation.
8. Emergency action.
9. Report of Director.

Authority: Sections 1-9 issued under section 232, Public Law 87-794.

Section 1. Authority

These regulations are promulgated pursuant to section 232 of the Trade Expansion Act of 1962, Public Law 87-794, October 11, 1962.

Sec. 2. Definitions

As used herein "Director" means the Director of the Office of Emergency Planning.

Sec. 3. General

Upon request of the head of any Government department or agency, upon application of an interested party, or upon his own motion, the Director shall set in motion an immediate investigation to determine the effects on the national security of imports of any article.

Sec. 4. Criteria for determining effects of imports on national security

(a) In determining the effect on the national security of imports of the article which is the subject of the investigation, the Director is required to take into consideration the following:

(1) Domestic production needed for projected national defense requirements including restoration and rehabilitation.

(2) The capacity of domestic industries to meet such projected requirements, including existing and anticipated availabilities of—

(i) Human resources

(ii) Products

(iii) Raw materials

(iv) Production equipment and facilities

(v) Other supplies and services essential to the national defense.

(3) The requirement of growth of such industries and such supplies and services including the investment, exploration, and development necessary to assure capacity to meet projected defense requirements.

(4) The effect which the quantities, availabilities, character, and uses of imported goods have or will have on such industries and the capacity of the United States to meet national security requirements.

(5) The economic welfare of the Nation as it is related to our national security, including the impact of foreign competition on the economic welfare of individual domestic industries. In determining whether such impact may impair the national security, any substantial unemployment, decrease in revenues of Government, loss of skills or investment, or other serious effects shall be considered.

(b) The Director shall also consider other relevant factors in determining whether the national security is affected by imports of the article.

Sec. 5. Applications for investigation

(a) Applications are required to be in writing. Twenty-five copies shall be filed by mail with the Director, Office of Emergency Planning, Washington, D.C.

(b) Applications shall describe how the quantities or circumstances of imports of the particular article affect the national security and shall contain the following information:

(1) Identification of the person, partnership, association, corporation, or other entity on whose behalf the application is filed.

(2) A precise description of the article.

(3) Description of the applicant and the domestic industry concerned, including pertinent information regarding companies and their plants, locations, capacity and current output of the domestic industry concerned with the article in question.

(4) Pertinent statistics showing the quantities and values of both imports and production in the United States.

(5) Nature, sources, and degree of the competition created by imports of the article in question.

(6) The effect, if any, of imports of the article in question upon the restoration of domestic production capacity in an emergency.

(7) Employment and special skills involved in the domestic production of the article.

(8) Extent to which investment and specialized productive capacity is or will be adversely affected.

(9) Revenues of Federal, State, or local governments which are or may be affected by the volume or circumstances of imports of the article.

(10) Defense or defense supporting uses of the article, including data on defense contracts or subcontracts, both past and current.

(c) Statistical material presented should be on a calendar year basis for sufficient periods of time to indicate trends and afford the greatest possible assistance to the Director. Monthly or quarterly data for the latest complete years should be included as well as any other breakdowns which may be pertinent to show seasonal or short-term factors.

Sec. 6. Confidential information

Information which would disclose confidential business data or operations within the meaning of section 1905 of title 18 of the United States Code will be accorded confidential treatment by the Director if submitted in confidence. All information submitted in confidence must be on separate pages marked "Business Confidential."

Sec. 7. Conduct of investigation

(a) The investigation by the Director, or by such official or agency as he may designate, shall be such as to enable the Director to arrive at a fully informed opinion as to the effect on the national security of imports of the article in question.

(b) Upon undertaking an investigation the Director, unless it would be contrary to the interests of national defense, shall issue a public notice thereof which shall be published in the Federal Register. Any interested party may submit to the Director 25 copies of any comment, opinion, or data relative to the investigation within 45 days after such public notice. Rebuttal to material so submitted may be filed with the Director within 75 days after such public notice and all data and comment from interested parties shall be a matter of record by 90 days after the giving of such public notice or 15 days after the close of any hearing conducted under paragraph (f) of this section, whichever is later.

(c) All applications filed and all comments, opinions, and data submitted pursuant to paragraph (*b*) of this section, except information submitted in confidence as provided in section 6, will be available for inspection at the Office of Emergency Planning in Washington, D.C., where they may be read and copied by interested parties, and the Director will maintain a roster of persons who have submitted material.

(d) The Director or his designee may also request further data from other sources through the use of questionnaires, correspondence, or other means.

(e) The Director or his designee shall, in the course of the investigation, seek information or advice from appropriate Government departments and agencies.

(f) In addition, the Director, or his designee, may, when he deems it appropriate, hold public hearings to elicit further information. If a hearing is held—

(1) The time and place thereof will be published in the Federal Register.

(2) It will be conducted by the Director or his designee, and the full record will be considered by the Director in arriving at his determination.

(3) Interested parties may appear, either in person or by representation, and produce oral or written evidence relevant and material to the subject matter of the investigation.

(4) After a witness has testified the Director or his designee may question the witness. Questions submitted to the Director or his designee in writing by any interested party may, at the discretion of the Director or his designee, be posed to the witness for reply for the purpose of assisting the Director in obtaining the material facts with respect to the subject matter of the investigation.

(5) The hearing will be stenographically reported. The Director will not cause transcripts of the record of the hearing to be distributed to the interested parties, but a transcript may be inspected at the Office of the Director in Washington, D.C., or purchased from the reporter.

Sec. 8. Emergency action

In emergency situations or when in his judgment national security interests require it, the Director may vary or dispense with any of the procedures set forth above and may formulate his views without following such procedures.

Sec. 9. Report of Director

A report will be made and published upon the disposition of each request, application, or motion under section 3 hereof. Notice of publication of a report shall be given in the Federal Register. Copies of the report will be available at the Office of Emergency Planning.

These regulations shall be effective upon publication in the Federal Register and shall supersede OCDM Regulation 4 (24 F.R. 364) and amendment 1 thereof (24 F.R. 601).

Dated December 20, 1962.

EDWARD A. MCDERMOTT,
Director, Office of Emergency Planning.

[F.R. Doc. 63-52; Filed, Jan. 3, 1963; 8:46 a.m.]

NRAC JUSTIFICATION SUMMARY

Mr. EVINS. Gentlemen, let's place in the record the statement on pages 13 and 14 which is the text of the function of the National Resource Analysis Center.

(The pages follow:)

OFFICE OF EMERGENCY PLANNING

SALARIES AND EXPENSES—NATIONAL RESOURCE ANALYSIS CENTER

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Positions	93	95	99

The National Resource Analysis Center (NRAC) was officially established by OEP order 1100.8, March 15, 1967, and its present organizational structure formalized by order 1100.8A on August 1, 1967. NRAC provides executive direction and general management in the development and implementation of the agency's overall program of resources preparedness. Specifically:

It provides the analytical and statistical basis for OEP's policy, planning, and program activities in support of the agency's national security responsibilities as set forth in Executive Order 11051; and develops and applies various mathematical models, simulation techniques, systems analysis, and other scientific methods for analyzing, forecasting, and testing alternative solutions to a wide range of resource problems pertaining to national security.

It develops contingency policies, plans, orders, and standby organizations required to mobilize and allocate resources, and to utilize fiscal and monetary measures to meet national security objectives; and, provides guidance for and coordination of resources mobilization planning among the Federal departments and agencies pursuant to statutes, Executive orders, and other authorities.

It conducts studies of materials resources to serve as the basis for developing policies designed to achieve national security objectives; identifies and analyzes present and future resource deficiencies and strengths; maintains, with the participation and support of the Federal departments and agencies, a national resource evaluation capability for predicting and monitoring the status of resources under all degrees of emergency; and, conducts studies to anticipate the impact of current and proposed U.S. national security programs on the economy and the mobilization base.

It conducts investigations and continuous surveillance of imports that threaten to impair the national security; performs secretariat services for OEP's Program Advisory Committee, the Joint United States/Canadian Emergency Resources Planning Committee, and others as required; provides resource analysis and mobilization planning support for the agency's participation in NATO and other international and foreign organizations; provides staff support to the Director as a member of the National Security Council; provides intelligence information for the OEP Director and the executive staff and staff.

The center consists of the Office of the Director, NRAC, and five divisions.

RESEARCH

Mr. EVINS. You point out your objectives for 1969: To develop an internal OEP research capability to provide the Director of OEP, and other elements of the Executive Office as appropriate, with alter-

native courses of action in emergency planning, and other management responsibilities; provide direction to the development of emergency plans; coordinate and direct the research activities of other Federal agencies; administer, direct, coordinate, and evaluate, as appropriate, the contract research programs of OEP. How did this operate prior to this reorganization? Do you do your own research and direct other agencies in research also?

Mr. DANIEL. Mr. Truppner.

Mr. TRUPPNER. We do our own research. In specific answer to your question, sir, there was an Office of Analysis and Research that handled this function prior to the reorganization.

Mr. EVINS. Yes, you reorganized and you are still doing research and directing others in their research.

Mr. TRUPPNER. That function was incorporated in NRAC.

Mr. EVINS. What are you doing today?

Mr. TRUPPNER. As you know, we are not asking for any new funding for contract research as of today. Therefore, we are working with other agencies who have the direct appropriation for contract research. An example is the Office of Civil Defense.

Mr. EVINS. Give us an example.

Mr. TRUPPNER. In the case of the Office of Civil Defense we are proposing to contribute approximately $30,000 of our funding to the Office of Civil Defense research. As of this year they have approximately $7 million available for this purpose.

Mr. EVINS. The Office of Civil Defense has about $7 million for research?

Mr. TRUPPNER. Yes, sir.

Mr. EVINS. What is the nature of the research which you are asking Civil Defense to do?

Mr. TRUPPNER. We are increasing, shall I say, our influence in an advisory capacity on the kind of contract research they are establishing. For example, we are encouraging them to further studies.

Mr. EVINS. What kind?

Mr. TRUPPNER. Post-attack recovery situations, for example. There is an initial period in a post-attack situation when putting the pieces together is a major preoccupation of the Government. OEP has a much longer term interest and responsibility for reconstruction and finally growth, but the extent to which we would be successful depends on the adequacy with which the initial phase is handled. We are endeavoring to get them to make studies in that area.

Mr. EVINS. They are making a study of the number of basements in the country for fallout shelters. Are you urging them to do this?

Mr. TRUPPNER. No, sir. Our business is simply in resource management. That is why the example I gave you has much to do with what resources would remain.

Mr. EVINS. Are you asking them to use their own funds for research?

Mr. TRUPPNER. For research in their area of business, which has an important effect on our responsibilities.

CIVIL DEFENSE RESEARCH

Mr. EVINS. Can you supply a breakdown for the record as to what you are asking them to expend for you?

Mr. TRUPPNER. Yes.

(The information follows:)

OEP participates in and benefits from OCD's research program, particularly in the field of postattack recovery research. While the whole recovery program is closely coordinated with OEP, the token funds contributed by OEP are identified with the following projects:

POSTATTACK RESOURCES MANAGEMENT

Development of methods, techniques for determining postattack requirements and priorities. The study includes methodology for preattack preparation and postattack application of alternative sets of resource management systems.

POSTATTACK SYSTEMS ANALYSIS

Study of special recovery problems of urban areas and the determination of minimum requirements and services to attain postattack viability in such areas.

FEDERAL AGENCY LOCAL ROLE

In the context of OCD five-city study, this involves analysis in depth of potential postattack local recovery roles of Federal agencies and the development of solutions to identified interagency operational problems.

PRODUCTION ANALYSIS

Analysis of industrial systems which produce items and provide services essential to postattack economic viability to improve the basis of preattack planning and postattack operations.

Mr. RICE. We call it "piggyback." With a small contribution we get some results out of their research for our purposes.

MATERIALS POLICY DIVISION, NRAC

Mr. EVINS. Place pages 17 through 19 into the record.
(The pages follow:)

MATERIALS POLICY DIVISION, NRAC

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Positions	20	18	18

The Materials Policy Division conducts studies of materials resources as the basis for developing policies designed to achieve national security objectives. The Division develops assumptions, policies, techniques, and guidelines for use by other Federal agencies participating in these studies as required. These studies, both long and short term, are addressed to contingencies ranging from small-scale limited war to general war including nuclear attack.

It develops and issues guidance to other Federal agencies on policies and programs for the management of stockpiles, covering the procurement, upgrading, rotation, storage, security, maintenance and disposal of strategic and critical materials.

The Division provides guidance and policies on various programs relating to industrial preparedness, including production equipment, survival items, industry evaluation board analyses, etc. It also monitors operation of programs for the allocation of materials under the defense materials system.

MAJOR ACCOMPLISHMENTS IN FISCAL YEAR 1967

Although in fiscal year 1967 this Division did not exist as a constituent of the (then) proposed National Resources Analysis Center, its functions were carried on elsewhere within the agency resulting in the following:

1. Completed the supply-requirements studies for nuclear war and reconstruction for each of the 77 materials stockpiled. Computers were used to a major extent in carrying out these requirements studies and the analyses used in determining nuclear war stockpile objectives.
2. Special conventional war studies of nine materials that are stockpiled were completed and new conventional war objectives were set for them.
3. BDSA completed for OEP a report on the supply-requirements situation for 18 high-heat alloy and special property materials.
4. OEP, with assistance from other agencies, carried out special studies of medical supplies and equipment and herbicides needed for Vietnam operations.
5. Authorized purchase programs for two materials, upgrading programs for six materials, and barter programs for eight materials.
6. New purchase specifications for five materials and special stockpile instructions for two materials were prepared by BDSA for approval by OEP.
7. Authorized capacity expansion programs for three materials.
8. Approved five requests for proposed nondefense leases of production equipment.
9. Sixteen machine tool "trigger order" contracts amended by BDSA to reflect new models of equipment were approved for placement by GSA.
10. Held preliminary discussions with representatives of the Department of Defense on the need for revising the rental rates specified by OEP for use in leases covering the nondefense leasing in Government-owned production equipment.
11. Industry evaluation board studies which assemble data on the capacities of individual plants to produce important products or services were completed.
12. Continued, in close cooperation with BDSA, to maintain the defense materials system.
13. Provided the lead executive branch testimony before congressional committees in support of administration stockpile legislation. Fiscal year 1967 stockpile disposal sales and commitments amounted to $266.9 million.

SELECTED OBJECTIVES FOR FISCAL YEAR 1968

1. Eliminate, or reduce, where feasible, existing shortages against stockpile through purchase, barter, and upgrading or refinement programs.
2. Develop new or revised storage plans required because of the acquisition of additional quantities of materials or the disposal of excess materials.
3. Reevaluate the policies that control the management of the stockpile.
4. Review capacity expansion proposals.
5. Development of techniques and procedures for making long-range supply-requirements analyses for materials.
6. Completion of supply-requirements studies for conventional war for each of the 77 materials that are stockpiled and for each of the various shapes, forms, alloys, grades, and so forth in which they are stored. Develop revised conventional war stockpile objectives based on these studies.
7. Initiation of new supply-requirements studies for nuclear war and reconstruction.
8. Conduct special supply-requirements studies for any material, component, or product if it is indicated that the supply may be insufficient to meet requirements for Vietnam operations and other essential uses.
9. Assist industry evaluation board in updating IEB analyses.
10. Assist other Federal agencies in conducting supply-requirements studies on resources for which they are responsible.
11. Employ the material factors developed in fiscal year 1967 in supply-requirements studies needed in the new review of conventional war stockpile objectives.
12. Test usage factors for 15 or 16 additional materials.
13. Maintain survival item program in existence on minimum sustaining basis pending cessation of hostilities in Vietnam.
14. Assist Department of Health, Education, and Welfare in conducting supply-requirements studies on medical survival items.
15. Develop and issue updated rental rates for nondefense leasing of Government-owned production equipment.
16. Evaluate GAO report on leasing of production equipment by the Department of Defense and, if appropriate, revise OEP's leasing policies.
17. Continue to process amendments to machine tool "trigger order" contracts.

18. Review proposals for nondefense leasing of Government-owned production equipment.
19. Provide support to the Director in connection with legislation to extend the provisions of the Defense Production Act beyond June 30, 1968.

SELECTED OBJECTIVES FOR FISCAL YEAR 1969

1. Continue actions to eliminate shortages in meeting stockpile objectives.
2. Continue to dispose of excess stockpiled materials.
3. Continue actions to improve quality and suitability of stockpiled materials for meeting requirements in an emergency period.
4. Conduct long-range supply-requirements studies for stockpiled materials.
5. Reevaluate nuclear war stockpile objectives based on supply-requirements studies for nuclear war and reconstruction made in fiscal year 1968.
6. If Vietnam operations continue, conduct special supply-requirements analyses on various materials, components, and products.
7. Continue to work with Industry Evaluation Board in obtaining plant capacity data for important resources.
8. Test materials usage factors for additional materials.
9. Initiate, if Vietnam hostilities cease, the maximum number of supply-requirements studies on survival items that can be performed by the agencies involved, or . . .
10. Maintain, if Vietnam hostilities continue, the program on a minimum sustaining basis.
11. Provide support to the Director, OEP, on legislative matters pertaining to materials policy.
12. Continue to monitor the implementation of policies governing Government-owned idle production equipment.
13. Continue to process amendments to machine tool "Trigger Order" contracts.
14. Review proposals for nondefense leasing of Government-owned production equipment.

SHORTAGE OF MATERIALS

Mr. EVINS. Here are your goals for 1969: Continue actions to eliminate shortages in meeting stockpile objectives. Do you want to tell us what commodities you are short of now for the record?

Mr. DANIEL. Yes, sir.

Mr. EVINS. You say you are going to continue actions to eliminate shortages. Spell out for the record some of the materials in which you came to the conclusion that there is a shortage.

Mr. DANIEL. Mr. Lawrence, what are the main materials?

Mr. LAWRENCE. Copper, nickel, platinum. Silver is a problem.

Mr. EVINS. You haven't got any gold, have you?

Mr. LAWRENCE. I think we have enough to meet our needs for the mobilization period.

Mr. EVINS. I hope we have. We have been losing a lot of it. They have been talking about short-term goals and long-term goals to stop the draining of gold out of the country, but they have not stopped it yet.

Mr. JONAS. If we need warehouse space, we are going to have some vacant space on Fort Knox, if we do not stop this gold drain.

DEFENSE PRODUCTION ACT

Mr. EVINS. What is the status on the program proposed for the use of the DPA revolving fund. The expenditures increased from $19 million in 1968 to $143 million in 1969. How much do you have in the revolving fund?

Mr. DANIEL. As of December 31, 1967 the borrowing authority had an unallocated balance of $282,979,000. The controlling factor at this

time in the application of funds for direct Federal contracting, however, is a limitation, which was enacted by Congress, of $100 million on such activities. That limitation is in the 1964 amendment to the act. Now, about $84 million of the $100 million contracting authority has been exercised for the Duval copper contract. This was something I wanted to come back to, Mr. Chairman. One of the members asked about what we have done in the copper field. In addition to what I said, we have, under this act, helped to finance this new copper operation in Pima, Ariz. Under this act, GSA will advance Duval $83 million of Defense Production Act funds and guaranteed a private bank loan of $48,750,000. In addition, Duval has advanced $16 million of its own funds to the project.

The first copper from this project will become available in late 1969. The production for the first 5 years will be about 57,800 short tons annually.

Now, by the time we pay the interest that is owed on the borrowing under this act, it is my understanding that we will not have anything left to continue, unless Congress does something more about it. Am I correct in that?

Mr. LAWRENCE. That is right.

Mr. JONAS. Did you say GSA advanced the $85 million?

Mr. DANIEL. Yes. That is part of the GSA contract which we authorized.

Mr. JONAS. The used their stockpile money?

Mr. DANIEL. No. This is Defense Production Act borrowing authority. This is under the Defense Production Act.

Mr. JONAS. Who borrows it? Do you borrow it from the Treasury?

Mr. LAWRENCE. Yes.

Mr. DANIEL. It is borrowed from the Treasury and we have to pay interest on it to the Treasury.

Mr. JONAS. Does OEP borrow it?

Mr. EVINS. The Defense Production Act has a fund in excess of $2 billion for making contracts to build up industry with respect to the critical materials which are needed. You have used borrowing of about $1,500 million over the years and you have about $250 million available in borrowing authority. Do you plan to use any of this borrowing authority in the next year?

Mr. DANIEL. We have used this which I have just told you about, which comes out of that $250 million. Does it not?

Mr. LAWRENCE. We can only use $16 million more because of the limitation in the language which prevents us from having more than $100 million under contract at one time.

Mr. JONAS. You loaned $85 million, so that just leaves you the $15 million?

Mr. LAWRENCE. Yes.

Mr. EVINS. $16 million more can be used for contracts?

Mr. LAWRENCE. Yes.

Mr. EVINS. You have that additional authority?

Mr. LAWRENCE. Yes.

Mr. JONAS. You said you guaranteed a loan of $40 million.

Mr. DANIEL. Guaranteed a loan of $48 million.

Mr. JONAS. To the same company?

Mr. DANIEL. Yes.

Mr. JONAS. Who does that guaranteeing?

Mr. LAWRENCE. The private banks loans are guaranteed by an agency of the Federal Government—in the Duval case by GSA. In other words, the Government guarantees that they will be repaid.

Mr. JONAS. Do you negotiate that?

Mr. LAWRENCE. No, sir. GSA did that.

Mr. JONAS. You just give GSA an order and they go out and borrow the money?

Mr. LAWRENCE. Yes.

TRIGGER CONTRACTS

Mr. EVINS. You talk about 16 machine tool "trigger order" contracts or amendments thereto. Tell us the nature of these "trigger order" contracts.

Mr. TRUPPNER. Those are contracts placed by the General Services Administration with the manufacturers of machine tools. They are designated tools with specific companies to meet the needs of a wartime situation.

Mr. EVINS. Are they put into operation under certain conditions?

Mr. TRUPPNER. When the Director of OEP issues instructions.

Mr. EVINS. The General Services Administration enters into a contract to buy machine tools but they are not put into effect until OEP gives them the green light; is that correct?

Mr. TRUPPNER. Yes, sir.

Mr. DANIEL. That is the way it is supposed to be.

NUCLEAR CONTINGENCY STUDIES

Mr. EVINS You say, "If Vietnam operations continue." Then you say you will conduct special supply-requirements analyses, and reevaluate that nuclear war stockpile objectives. What are your objectives?

Mr. DANIEL. What are our objectives?

Mr. EVINS. Yes; your nuclear stockpile objectives.

Mr. DANIEL. Well, they are based on the contingency of a nuclear attack on this country. To determine our objectives, we figure our requirements and what supply we can rely on.

Our objectives are the difference between what we figure our supply would be and what our needs will be; what we could meet from industry here and from shipments that could be made to us. Our objectives are the difference or the shortage that we feel we should stockpile for.

We will continue to reevaluate the stockpile objectives because of changes that are made from time to time.

Mr. WYMAN. Doesn't what you do really in this regard involve taking a look at where you think a possible nuclear attack might fall and what it would knock out in terms of defense capabilities and how much we should have in reserve in relation to particular materials?

Mr. DANIEL. That is correct.

Mr. WYMAN. And this kind of material would also include material from which nuclear explosives are made?

Mr. TRUPPNER. It could, yes.

Mr. DANIEL. It could, but I think the Chairman is right that those kinds of materials would be in other agencies.

Mr. WYMAN. So that you really plan to see how much copper would be knocked out if they knocked out a big copper area and how much other supplies would be knocked out and where we could get material in reserve, and so forth. This depends on your assessment of how much of an impact we would receive on an initial nuclear attack; is that right?

Mr. DANIEL. Yes, sir. For instance, we do not stockpile any uranium. We do not stockpile things that other agencies are taking care of as far as weapons are concerned.

Mr. WYMAN. I understand that. How can you estimate how much of an impact a nuclear attack would have unless you have the top secret material from the Defense Department on the capability of the Soviet Union, for example?

Mr. DANIEL. Well, we do have that.

Mr. WYMAN. Yes. This is a continuing study by people on your staff, all the time?

Mr. DANIEL. A continuing study. We also study the effect of nuclear attacks of various sizes and types.

Mr. WYMAN. When you say you are going to reevaluate and you say it doesn't make any difference whether there is an "if" before—whether the Vietnam war continues or not—is there something new that has developed in terms of the large bombs that the Soviet Union has exploded, or the new explosions coming from Red China that lead you to believe a reevaluation of the impact of an attack on the United States is necessary? Do you see any change?

Mr. TRUPPNER. Yes, sir; there has been. I would like this off the record, please.

Mr. EVINS. Off the record.

(Discussion off the record.)

STOCKPILE OBJECTIVES

Mr. EVINS. On the record. We have been working on this stockpile since 1950. When do you expect to reach your stockpile objectives for all materials?

Mr. DANIEL. The present objectives?

Mr. EVINS. Yes, the present objectives.

Mr. DANIEL. We have reached them all except——

Mr. TRUPPNER. Except nine, I think.

Mr. EVINS. What are they?

Mr. DANIEL. Principally chrysotile asbestos, copper, jewel bearings, quinidine, quinine, rutile, and titanium.

Mr. EVINS. Do you have any projections as to when you may reach these goals?

Mr. DANIEL. We won't reach these particular goals for some time, unless there is a change. These goals may be changed. I wouldn't doubt but what these objectives and goals may be changed some, but as far as our acquiring any more of these materials there has been no request made for funds in GSA other than the usual amount for jewel bearings.

BARTER

Mr. EVINS. Tell us about your new barter plan. How is this working?

Mr. DANIEL. I suppose the GSA people have discussed that with you some, but as we understand it, barter, as far as agriculture is concerned, is not going to be used any more. I understand that it is preferable to have barter supported by a direct appropriation which would pay for the materials and I believe that GSA did not ask for any appropriation for it this year; did they, Mr. Lawrence?

Mr. LAWRENCE. No, sir.

Mr. DANIEL. I don't know how far our request and recommendation got, but I understand no request is made of you for any money to take care of any barter with Commodity Credit Corporation products for this next fiscal year.

PARTICIPATION WITH NATO

Mr. EVINS. In your Mobilization Plans Division you state that you participate with NATO and other international activities in the development of agreements and machinery for the emergency management of resources. Now, no NATO country appears to be ready to come to our assistance in an emergency. What do the agreements provide?

Mr. DANIEL. The agreements simply provide that we will work together on emergency planning in their countries like we are doing in ours to meet these emergency contingencies that we have been talking about. This had been limited to a nuclear contingency planning up until this year. We took the leadership in trying to get these countries to do emergency planning such as we have for conventional war. That was adopted. We are hopeful that they will make those plans. It is a cooperative matter to get them to prepare for these emergencies like we are trying to do.

Mr. EVINS. You state that progress was made with international organizations in the development of compatible plans and measures for emergency resource mobilization. What are the organizations?

Mr. DANIEL. I am referring to NATO and Canada, the agreement that I have outlined to you.

MOBILIZATION PLANS DIVISION

Mr. EVINS. Place pages 22 through 26 into the record.

(The pages follow:)

MOBILIZATION PLANS DIVISION, NRAC

	Fiscal year		
	1967	1968	1969
Positions	14	14	14

The Mobilization Plans Division develops contingency plans, orders, and standby organizations required to mobilize resources to meet national objectives, and provides guidance to all levels of government in the development of resource mobilization plans and programs. Specifically—

It develops operational concepts, policies, principles, and the necessary organizational structure for the mobilization and management of the Nation's resources under varying types of emergency conditions;

It defines emergency resource mobilization responsibilities at all levels of government and develops operational policy and guidance applicable during emergencies to provide compatible resource management systems and procedures;

It develops basic systems and procedures under which major resources may be programed centrally in an emergency;

The Division serves as principal liaison to Federal departments and agencies on resource mobilization matters; provides guidance in their development of resource mobilization plans and measures; maintains a continuing review of the resource preparedness programs of the Federal departments and agencies and recommends actions for strengthening and improving these programs;

It provides guidance for the development of a capability at State and local levels to conserve, distribute, and use resources under nuclear attack conditions; reviews State plans;

It develops basic standby documents required for resource mobilization under varying emergency conditions;

It participates in NATO and other international activities in the development of agreements and machinery for the emergency management of resources;

It develops plans, in cooperation with other Federal agencies and industry, for the dispersal and protection of facilities and services essential to the Nation's security;

It cooperates in the development of economic stabilization policies and measures to insure consistency with overall resource program objectives; and

It develops policies for application by other agencies of the priorities and allocation authorities in the Defense Production Act.

MAJOR ACCOMPLISHMENTS IN FISCAL YEAR 1967

During fiscal year 1967 a resource mobilization plan for limited war was developed. The plan includes a range of emergency resource management measures which could be taken within the framework of an economy undamaged by direct enemy attack. The development of an organizational structure and the functional arrangements necessary to carry out the central resources programing responsibilities (the Office of Defense Resources) has been completed.

Under the basic concept, OEP staff and OEP executive reservists would form the nucleus of this standby emergency organization. The current OEP staff has been given standby emergency assignments to specific areas of responsibility within ODR and general indoctrination courses were developed at both the staff as a preparedness measure. This work has been completed at both the national and field levels. The executive reserve roster for ODR has been expanded to approximately 200. Area briefings on the ODR concept and functions have been carried out for the ODR executive reservists.

The plan includes a draft Defense Resources Act and implementing Executive order, as well as the basic emergency action documents necessary to implement various aspects of the plan.

The Federal resource agencies have developed the necessary supporting procedures and standby organizations to provide an operating capability for a limited war emergency. All resource agencies (except the newly formed Department of Transportation) have completed their assigned resource sections. These sections have been revised and edited and are included as annexes to the plan.

In addition, 33 of the resource sections of the State plans for the conservation, distribution, and use of resources at the State and local level were reviewed and approved. Progress was also made with international organizations in the development of compatible plans and measures for emergency resource mobilization.

OBJECTIVES FOR FISCAL YEAR 1968

The major objective in fiscal year 1968 is to reach a state of readiness to meet various contingencies in emergency resource mobilization, including the contingency of general war. This will include:

1. Develop a resource mobilization plan for general war.
2. Expand executive reservist program to meet general war conditions.

3. Develop programs for industrial preparedness.
4. Provide for the Director's issuance of a revised Defense Manpower Policy No. 4 assigning to the Secretary of Labor, the Secretary of Commerce and all Federal procurement agencies certain responsibilities respecting preferences in Federal procurement contracting for firms operating in or near areas with high concentration of unemployed.
5. Provide guidance and direction to Federal resource agencies in the development of operational plans and programs for emergency contingencies.
6. Review and evaluate agency programs to insure their adequacy.
7. Develop guidance and provide direction to all levels of government to achieve a capability at State and local levels to conserve, distribute and use, resources during an immediate postattack period.
8. Work with NATO and other international organizations to provide a coordinated approach in mobilization planning and compatible resource measures.

OBJECTIVES FOR FISCAL YEAR 1969

In fiscal year 1969 the Mobilization Plans Division will continue to update and modify, as required, general resource mobilization guidance and basic plans. In carrying out this program, full consideration will be given to advanced computer techniques for resource information data gathering and control.

Specific objectives are briefly outlined as:

1. In conjunction with other divisions of NRAC, analyze in depth, various emergency mobilization contingencies and develop alternative resource control policies, measures, basic documents, and type of organizational structure for the most effective and feasible management of resources. Extensive use will be made of a task force approach in order to utilize all staff expertise. This planning work will cover areas of manpower, production, construction, fuel and energy, food and water, health, communications and transportation.
2. Serve as the central point of liaison in OEP to work with the Federal resource agencies in the updating and improvement of their operational plans and organizational arrangements for carrying out their assigned resource responsibilities. In fiscal year 1969, emphasis will be placed on extending operational capability to all levels of government in order to meet the many types of emergency contingencies that may arise in the mobilization of the Nation's resources.
3. During this year the Division will cooperate with Federal resource agencies in the further development of the industrial preparedness program. Particular empsasis will be placed on the development of an adequate construction preparedness program.
4. During fiscal year 1969, the program to ensure an adequate capability at State and local levels for the conservation, distribution, and use of resources under nuclear attack conditions will be continued and updated as appropriate.
5. The work with NATO and other international organizations in the development of resource mobilization plans and international resource agreements will be continued.
6. Method for testing the effectiveness of resource management systems will be established.

EXECUTIVE RESERVE

Mr. TALCOTT. How many people are involved in this executive reservist program?

Mr. PHILLIPS. Almost 4,000 people.

Mr. TALCOTT. Do they agree to serve in this capacity, in time of emergency, and not in any other capacity?

Mr. PHILLIPS. This is basically the responsibility they have, to serve the Government in a war or emergency situation.

ECONOMIC STABILIZATION DIVISION

Mr. EVINS. The economic stabilization we discussed this morning. You have some standby plans ready but they have not been put into effect. They will not be put into effect without approval from Congress?

Mr. DANIEL. Yes.

Mr. EVINS. Place in the record pages 27 through 30.
(The pages follows:)

ECONOMIC STABILIZATION DIVISION, NRAC

	Fiscal year 1967	Fiscal year 1968	Fiscal yeaf 1969
Positions	10	11	11

The Economic Stabilization Division establishes and maintains emergency measures that may be required to insure economic stability under varying emergency situations, including national survival and recovery in the event of attack. Implicit is the development of the authorities, plans, procedures, and capabilities for their execution. Specifically:

It develops standards, criteria, and the operational programs needed to implement and administer "direct" economic control measures involving price, wage and salary, and rent stabilization and a system of consumer rationing. Where appropriate, the Division utilizes the knowledge and expertise of a number of consultants from private industry and other Federal departments and agencies. It also develops comprehensive organizational plans required to activate an emergency economic stabilization agency, including detailed functional statements, personnel requirements, etc.

The Division works closely with Federal financial departments and agencies in the development and coordination of emergency monetary, credit, and banking programs, and organizational requirements. It insures compatibility of these programs with those developed for "direct" controls.

It identifies, develops, and maintains with the Federal and State departments and agencies emergency economic stabilization preparedness and operational support roles. As necessary, revamps assignment to these agencies and exercises surveillance and coordination over such assignments.

It conducts, coordinates, and/or monitors economic studies to support the development of new planning concepts, special orders, and regulations that would be required in the implementation of economic stabilization program objectives.

It develops criteria, standards, techniques, and guidelines necessary to support emergency stabilization preparedness operations in the OEP regional offices and, as appropriate, the States and lower levels of government.

The Division insures emergency economic stabilization preparedness coordination with the Office of Civil Defense in the development and execution of State and local resource management programs.

It cooperates in the development of emergency resource mobilization policies and measures to insure compatibility with overall economic stabilization objectives.

MAJOR ACCOMPLISHMENTS IN FISCAL YEAR 1967

Although not a constituent of NRAC in fiscal year 1967, this Division carried out its functions during much of the year within the agency's former organizational framework to accomplish the following:

1. Reviewed the economic stabilization section of the emergency resource management plans of 31 States, provided substantive comments for revision, and thereafter approved these plans.

2. Prepared and arranged for the prepositioning of additional program guidance material designed to assist regional OEP offices, and State and local governments in the establishment and maintenance of an organizational and operational capability to respond to a nuclear attack emergency.

3. Coordinated a series of conferences at regional levels, developed materials for test exercises, and participated in a number of regional- and State-sponsored exercises designed to evaluate the effectiveness of emergency plans at regional, State, and local levels.

4. Prepared a number of separate legislative drafts which, subject to adoption by the President and the approval of Congress, would be required in order to impose various types of direct and indirect economic controls in nonnuclear attack situations.

5. Circulated to, and obtained the approval of, eight major Federal departments and agencies to these legislative drafts (except for one issue).

6. Prepared and circulated for review by departments and agencies involved drafts to Executive orders required to implement the aforementionel legislative approaches.

7. Identified, in priority order, a number of basic industries for which "tailored" regulations would be among the first required order to provide optimum equity and to eliminate potential production "roadblocks."

8. Recruited, and enrolled some 25 qualified, high-level consultants (from nominations received from various trade organizations and industry associations) to assist in the development of "boilerplate type" industry regulations, based upon their knowledge of current industry customs, practices, pricing methods, etc.

9. Completed a preliminary, but comprehensive, emergency Economic Stabilization Agency organizational structure and made substantial progress toward the completion of organizational structures for constituent agencies thereof. This includes the preparation of tentative staffing patterns, detailed qualification standards, and specific position descriptions.

OBJECTIVES FOR FISCAL YEAR 1968

1. Develop, in cooperation with other departments and agencies, emergency economic stabilization legislative authorities, executive orders, and basic regulations required to implement such authorities.

2. Prepare draft memorandums of understanding for selected Federal regulatory agencies and commissions, to govern relationships affecting economic stabilization under emergency conditions.

3. Complete the review of the economic stabilization section of State and Territorial emergency resource management plans; provide briefings to State economic stabilization personnel; conduct training exercises below the State office level in the States and territories, and complete the prepositioning of emergency economic stabilization operating instructions in all States and territories participating in the comprehensive program.

4. Further refine the organizational structure of an Emergency Stabilization Agency and continue the development of programs to staff these emergency organizations through qualified personnel within the executive branch and through the selection and training of industry executives.

OBJECTIVES FOR FISCAL YEAR 1969

1. Continue to develop and refine economic stabilization control measures with particular emphasis on industry control orders and regulations; and, initiate the drafting of special orders for selected industries through the use of additional consultants from private industry.

2. Explore the applicability of types or "mixes" of control measures that might be used to complement and support traditional monetary, credit, and fiscal measures.

3. Develop the regional and district organizational and administrative requirements for each of the four constituent agencies of an emergency economic stabilization agency (price, rent, wage stabilization, and consumer rationing); and, in cooperation with the national and regional offices of the Civil Service Commission, complete a system that woud provide qualified Federal personnel for temporary assignment to an emergency economic stabilization agency or to one of its four constituent agencies during the early days of emergency operations.

4. Arrange for testing the economic stabilization section of State and territorial emergency resource management plans and for evaluating the results with a view to revising and improving them; and, conduct regional tests to determine the readiness of regional executive reservists to assume their emergency responsibilities.

INDUSTRY PROBLEMS

Mr. EVINS. You state here your objectives for 1969, one of them is to initiate the drafting of special orders for selected industries. How many, and what are your plans?

Mr. DANIELS. Mr. Truppner.

Mr. EVINS. What do you plan to do?

Mr. TRUPPNER. At the moment we have identified 200 separate industry problems to deal with by specific regulation.

Mr. EVINS. Give us an example.

Mr. TRUPPNER. The retail food industry, retail gasoline, automobiles.

Mr. EVINS. This is price controls?

Mr. TRUPPNER. Yes, sir.

Mr. EVINS. Rent controls?

Mr. TRUPPNER. Yes, sir.

Mr. EVINS. You have the plans, but they have not been put into effect?

Mr. TRUPPNER. The Director has recently——

Mr. EVINS. We talked about that earlier. Then I read your words "special selected industries." Is this something separate?

Mr. TRUPPNER. It is a more refined development than that which the Director referred to before as being ready. We are ready in general.

Mr. EVINS. Each of your four constituent agencies are all ready?

Mr. TRUPPNER. Yes.

RESOURCE EVALUATION DIVISION

Mr. EVINS. Your Resource Evaluation Division, you want four jobs. We discussed that earlier. This Division has to do with your large-scale computer, the Univac 1108. You put in computers and you have to have more jobs. You say you will work more closely with agency data sources and agency users to establish more precise criteria for data collection. Place all this in the record. This is your main braintrust.

(Pages 32 through 37 follow:)

RESOURCE EVALUATION DIVISION, NRAC

	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Positions	18	18	22

The Resource Evaluation Division provides statistical and analytical support for emergency planning and preparedness in the Office of Emergency Planning and in other Federal departments and agencies. Rather than perform analyses which a single department or agency can perform most efficiently and effectively for itself, this Division focuses attention on analytical tasks which can be performed more efficiently and effectively on a collective basis. It depends heavily upon other agencies for data and staff support. In addition to maintaining a close working relationship with other Federal departments and agencies, it provides specialized statistical and analytic services to elements of the executive office.

The analytical requirements which many agencies have in common and which the Resource Evaluation Division endeavors to meet include the following types of estimates: Nuclear damage estimates, nuclear hazard estimates, resource requirement and availability estimates, feasible production estimates, and economic and industrial impact estimates. For the purpose of making such estimates, it develops and applies a variety of models and massive data banks. The Resource Evaluation Division collaborates with the Canadian Emergency Measures Organization in making joint studies.

This Division provides direction to the Mathematics and Computation Laboratory (MCL).

The Division's proposed increase of four professional positions is designed to insure maximum benefits from the investment in the new high-speed, large-scale computer, the Univac 1108. These positions are needed to meet two basic requirements: (1) to provide closer surveillance and tighter direction of MCL to insure that the use of its computer systems is consistent with the highest standards of efficiency and priority management and that its computations and analyses are always of a quality acceptable to the scientific community; and (2) to work more-

closely with agency data sources and agency users to establish more precise criteria for data collection and more practical methods of manipulation and priority processing.

MAJOR ACCOMPLISHMENTS IN FISCAL YEAR 1967

Although in fiscal year 1967 this Division did not exist as a constituent of NRAC, its functions were carried on during the year by the unit formerly known as NREC, resulting in the following accomplishments:

1. Continued emphasis during the year was placed on improving and maintaining the resource evaluation data base. During the year over 60 different files were updated and improved. The total number of resource records was increased from over 1 million to over 4 million.

2. A new vulnerability study, Hazard 1965, was published and distributed. In addition, special Hazard 1965 studies were made in response to General Services Administration, Department of Commerce, Department of Defense, and many other individual agency requests.

3. A new and improved damage assessment model, Ready, was first used for studies and exercises during this period.

4. Increased emphasis was placed on the problems associated with limited war. In this connection, the national economic strength model (Strength) was used to estimate the impacts associated with the current and hypothetical levels of Vietnam involvement and those associated with an antiballistic missile system deployment.

5. Although the Strength model was operational throughout fiscal year 1967, a continuing effort was made to improve the model and the interindustry and requirements factors incorporated into it. Particular attention was paid to the development of improved methods for handling the generation of the detailed final demand statements necessary for model application. The development of an interindustry table for use in the Strength model based on an activity rather than establishment classification was completed.

6. Work was undertaken in the SPIM research project with the objective of developing a method for estimating the impacts on relative prices caused by major shifts in national objectives. Pilot studies were made of the labor components of value added for several industrial sectors which gave encouraging results.

7. Participated with the Canadian Government in joint studies of nuclear hazards in the United States and Canada.

8. Other accomplishments:

(*a*) created a U.S. missile category;

(*b*) created a DSA category;

(*c*) special application of Hazard 1965 for use in review of stockpile requirements;

(*d*) addition of Dun & Bradstreet industry data to data base;

(*e*) inaugurated the Ready model (damage assessment) and began conversion of files for Ready use; and

(*f*) participated with DSA and GSA in special training programs for staffs of these agencies.

OBJECTIVES FOR FISCAL YEAR 1968

The programs on which the Resource Evaluation Division expects to focus much of its attention during fiscal year 1968 fall within the general categories of economic analysis and data development.

These programs will support other programs of other divisions of NRAC, other elements of OEP and other agencies. Also RED anticipates support from other elements of OEP, especially the Systems Evaluation Division, and from other agencies.

The programs which will receive emphasis are the following:

ECONOMIC ANALYSES

(1) Development of methodology, including further development of the Strength model for analysis of impacts of Government programs associated with limited war, the SPIM system for analysis of price and alternative contingencies, and the general formulation of a model which will consider interregional flows as well as interindustry flows.

(2) Regional and network analysis including coordination of a contractor's formulation of a regional model and participation with the Systems Evaluation Division, elements of the new Department of Transportation and other agencies in the development of methodologies and models for network analysis.

(3) Final demand estimation and the estimation of the impacts of final demand on various factors of the economy in support of studies by the Impact Analysis Group Task Force and activities of other elements of OEP and other agencies upon request.

(4) Postattack analyses including case studies such as the Joint Chiefs of Staff Study, PONAST, and the national test exercise REX, and also general vulnerability studies in the Hazard series.

DATA DEVELOPMENT

(1) Development and refinement of resource data including the organization of approximately 2 million resource records recently added to the previous 1 million resource record data base.

(2) Improvement of requirement factors for use in translating general statements of national program goals into detail statements of final demand.

(3) Improvement and updating of interindustry factors, including input requirements per unit of output in the production process.

(4) Executive Office and White House support including the design and operation of information management systems.

Included in the foregoing programs are resource evaluation and recovery studies undertaken jointly with the Emergency Measures Organization of Canada. The Resource Evaluation Division, as in the past, stands ready to provide resource evaluation, advice, and assistance to NATO.

The Resource Evaluation Division will also support the Assistant Director, Telecommunications, with computer support of the telecommunication allocation function.

OBJECTIVES FOR FISCAL YEAR 1969

The Resource Evaluation Division will continue during 1969 to focus much of its effort on economic analyses, information management, and related data and program development in support of contingency planning and preparedness in OEP and other agencies.

DATA DEVELOPMENT

(1) Continuation of the devolpment of resource records regularly being added to the agency's data base.

ECONOMIC MODELING AND ANALYSIS

(1) Adoption, improvement, and application of macro- and micro-economic models for measurement of the efficacy of alternative combinations of Federal contingency policies, plans, and programs.

(2) Development and application of a gaming model to develop skills in resource management.

(3) Development and application of a comparatively simple prototype regional analysis model.

(4) Application of post-attack recovery and related resource evaluation models.

(5) Further development and application of a frequency-management system in support of the Director of Telecommunications Management.

INFORMATION MANAGEMENT

(1) Improvement of—
Resource data base;
Requirement factor files;
Interindustry factor files;
Economic time series; and
Other data required by economic and information management systems.

(2) Development and application of a prototype system for updating and projecting into the future selected economic statistics.

SYSTEMS EVALUATION

Mr. WYMAN. You don't rely on computers to supersede your judgment, do you, when it comes to this sort of thing? The information supplied as a result of programing into a computer?

Mr. DANIEL. I don't so far. I will let the expert answer that.

Mr. TRUPPNER. I refer you to the ancient expression, GIGO—garbage in, garbage out. Unless common sense and good judgment are used in the inputs put into a computer you won't get a very helpful answer out of the computer.

Mr. EVINS. What you put in is what comes out. The input is important. My question is, Why can't you transfer some of these systems evaluation division positions to other areas of higher priority.

Mr. DANIEL. Mr. Truppner?

Mr. TRUPPNER. I regard them as my area of highest priority, sir.

Mr. EVINS. How is this different from the previous division?

Mr. TRUPPER. If I may make a distinction, the Resource Evaluation Division which we just covered evaluates the relative importance of resources. This relates to resources such as copper, steel, and the like. The Systems Evaluation Division people are evaluating the policies which the OEP is developing.

Mr. EVINS. That is what the Director does?

Mr. TRUPPNER. Yes, sir. And we are working for the Director. We are trying to give him a more rational basis for making his policy decisions than he has had heretofore.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages 38 and 39.

(The pages follow:)

SYSTEMS EVALUATION DIVISION, NRAC

	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Positions	14	14	14

The Systems Evaluation Division develops and applies analytical techniques in evaluating both existing and proposed mobilization plans and programs in the light of national security objectives. These analyses include the examination of various benefit measures to provide adequate bases for precise problem definition leading to cost-benefit considerations and sensitivity studies among alternative system candidates.

Systems analysis and operations research techniques are applied to agency-wide problems as well as to those of other NRAC divisions.

MAJOR 1967 ACCOMPLISHMENTS

This Division, one of the cornerstones of OEP's reorganization accomplished in fiscal year 1968, did not exist in fiscal year 1967, but positions are shown above for fiscal year 1967 to reflect the fact that the Division was organized by reassignment of positions from other NRAC elements.

OBJECTIVES FOR FISCAL YEARS 1968 AND 1969

During this period the Systems Evaluation Division will direct its efforts to the development and application of cost-benefits and similar analytical techniques for application in formulating and evaluating policies and programs for coping with national emergencies. Particular emphasis will be given to the development of alternative emergency plans in policy formulation in the fields of stockpiles, economic contingencies, and recovery planning.

Analysis of stockpiling of critical materials for limited war will include ascertainment of requirements, specification of content, assessment of purpose, and recommendations for manner of use or disposal.

Economic contingency planning will make extensive use of economic models in the form of textual description or mathematical formula and the application of computers to available economic data to provide a basis for policy decisions and program evaluations.

Recovery planning will include formulation and evaluation of programs to enhance the Nation's capabilities to recover from nuclear attack through the application of network analyses, identification of alternative supply sources, evaluation of manpower skills and techniques, and similar studies.

Studies, reports, and participation in the application of these findings will be made as appropriate to the stage of accomplishment of objectives or as required by current events.

Emergency Operations Office

Mr. Evins. With regard to the Emergency Operations Office, place in the record pages 44 through 53.

(The pages follow:)

	Fiscal year 1967 actual	Fiscal year 1968 estimate	Fiscal year 1969 estimate
Positions	26	26	26

EMERGENCY OPERATIONS OFFICE

The Director of the Emergency Operations Office directs the activities of the Government Readiness Division, the Special Facilities Division, and the Disaster Assistance Division (covered at p. 92).

GOVERNMENT READINESS DIVISION

This Division provides the overall leadership and coordination of Federal, State, and local readiness programs designed to insure the capability of Government to respond effectively to any emergency. It is responsible for all aspects of continuity of government, including succession lines, essential records, emergency operating facilities, emergency communications, the effective use of government resources, and the predelegation of authorities. It prepares Executive orders and other documents which formally assign emergency planning responsibilities to Federal departments and agencies. It develops plans and procedures for the restoration of civil authority at various levels of government in the event of disruption. It fosters interstate compacts and the enactment of legislation relating to emergency preparedness. This Division also provides the liaison with the Office of Civil Defense and other agencies to provide the necessary coordination between civil defense and other aspects of total emergency preparedness. This Division implements and maintains the readiness of standby agencies and programs, when developed, including the updating of procedures, organization, staffing and logistical support, as well as the training of personnel with emergency assignments to these agencies. It also administers the national defense executive reserve program.

SPECIAL FACILITIES DIVISION

This Division provides administrative support, planning and coordination of agency use, and management of emergency operating facilities for OEP national office and top level Federal Government.

Major accomplishments in fiscal year 1967

1. Revised guidance was issued this year to insure that adequate succession is provided for key officials at all levels. The new criteria establishes the depth of succession and reporting requirements for constituent agencies, bureaus, and field organizations.

2. New criteria was issued this year to provide the necessary authority and standards for agency actions in the predelegation of emergency authorities to subordinate levels.

3. Determinations of essential wartime functions have been developed by all agencies with assigned emergency responsibilities. Periodic review and reassessment of essential functions are being made to insure that the functions identified reflect changes in assumptions, organizations, and emphases.

4. Agences reported on the status of their readiness plans and these reports were reviewed and evaluated.

5. All agencies with emergency responsibilities reported this year to the National Archives that essential records have been preserved and appropriately prepositioned.

6. Eight emergency operations action documents have been prepared in support of the ODR plans for limited war.

7. Of the 34 emergency planning assignments made to departments and agencies by Executive order, one was completed and issued in fiscal year 1967. In addition, Executive order assignments to two departments were brought to the point of final clearance.

8. Two emergency operating facilities were completed this year; the development of another emergency facility was initiated, and another facility is in the design stage.

9. A "Handbook on Support Requirements for Federal Agency Emergency Operating Facilities," OEP Circular 9400.2 was published in November 1966. This handbook assists the Federal departments and agencies in the development of their emergency operating facilities and the identification of actions required to achieve acceptable readiness.

10. Steps were taken in fiscal year 1967 to establish a prototype consolidated emergency operating facility for multiple agency use in one region which will provide greater emergency operational capability more economically than the several individual agency sites which will be absorbed. The experience gained will be applied to other regions.

11. The improved Interagency Communications System serving the emergency operating facilities of the headquarters of the Federal Government has been maintained in a continuing state of operational readiness. The system is tested periodically.

12. A preliminary review of all requirements has been completed in a study of emergency communication services to Federal agencies by the General Services Administration under the auspices of the National Communications System and with OEP participation.

13. Construction was started on the Federal Regional Centers in Regions 1 and 8.

14. Ten departments and agencies now sponsor 22 National Defense Executive Reserve units. A total of 3,909 reservists are now enrolled for a gain of 341. In addition to the customary unit training sessions held throughout the country and the substantial home study by each Executive Reservist, the year's training program featured a series of seven 1-day regional conferences sponsored by the Office of Emergency Planning. Reservists enrolled in units of nine agencies participated in the conferences with a total of 974 Executive Reservists attending.

15. The standby emergency censorship organization and supporting plans were brought to a stage of operational readiness. A protected operating facility for the emergency national censorship headquarters operation was completed and in its main aspects is operational. Training was conducted monthly and plans were reviewed and updated. Standby agreements have been completed with Post Office and Treasury, and efforts are underway for completion of agreements with other Federal departments and agencies in support of the program objectives. Negotiations were begun with Canada to develop the framework for mutual United States-Canada emergency censorship operations.

16. The revised Emergency Broadcast System plan was completed through the combined efforts of the major networks, FCC, OCD, and OEP. The system is operational and was tested monthly from various points in and away from Washington. Approximately one-fourth of the 2,500 broadcasting stations in the system have been protected against radiological fallout.

17. All States except one have enacted some or all of the legislative provisions for assuming continuity of State and local governments. Thirty-four State legislatures have ratified constitutional amendments providing the basic authority for continuity of Government legislation. Five other States indicate they have adequate existing authority and do not need constitutional changes. Legislation providing for adequate succession to the Governor has been enacted by 39 States and succession to legislators by 18 States. Thirty-six States have passed legislation authorizing the movement of their governments in an emergency to emergency operating facilities. Twenty-one States have provided for

the management, protection, and preservation of records essential to Government operations and those which will protect the rights of individuals.

Objectives for fiscal years 1968 and 1969

The following objectives are designed to increase the emergency readiness of governments:

1. *Facilities*—Steps will be taken to—

(*a*) Increase the capability of the National Headquarters of the Federal Government to operate under emergency conditions by—

(1) the incorporation of suitable emergency operating space in new buildings designed primarily for other purposes, where feasible;

(2) modification of existing facilities to accommodate emergency requirements;

(3) the establishment of improved sites for five agencies;

(4) completion of two emergency operating facilities now under construction and initiation of construction of another facility; and

(5) upgrading the operation readiness of the national headquarters sites generally with special attention to the improvement of the emergency facilities of five specific agencies;

(*b*) Assess the adequacy of the present program for emergency operating facilities through a comprehensive study of experience to date, current and projected assumptions, principles and concepts and alternate plans for meeting the objective;

(*c*) Maintain special facilities in a constant state of operational readiness;

(*d*) Advance the schedule in coordination with OCD for the establishment of the remaining Federal regional centers (FRC's) to house the day-to-day activities of OCD and OEP and serve as the focal points in the regions for coordination of the activities of the Federal agencies in an emergency. It is contemplated that one or more of the FCR's will be completed during each year, fiscal years 1968 and 1969;

(*e*) Carry out selected pilot projects in combined field relocation sites in two regions to determine economies which can be accomplished by multi-agency occupancy of fewer but more efficient and better protected regional area emergency operating facilities. Experience gained will be applied in other regions; and

(*f*) In coordination with the National Communications System and the General Services Administration—

(1) In fiscal year 1968, formulate a proposal for meeting the identified emergency field communications requirements; and

(2) In fiscal year 1969, initiate the program designed to satisfy such requirements.

2. *Special projects.*—Carry out special assignments in sensitive areas, such as participation in the United States-Canada joint planning efforts and the furnishing of specialized assistance concerning NATO civil emergency planning problems.

3. *Assistance to the National Resources Analysis Center.*—Furnish communications and facilities support for computer operations and provide guidance for the input to continuity of Government models.

4. *Master plan.*—

(*a*) In fiscal year 1968 develop a draft plan to delineate the interacting elements of Government in an emergency as a basis for individual agency plans and the taking of emergency actions on a timely basis.

(*b*) In fiscal year 1969 complete and promulgate the master plan and issue guidance to Federal agencies for the preparation of their supporting plans.

5. *Executive order assignments.*—

a. Prepare new emergency Executive orders as necessitated by departmental reorganization and newly delegated responsibilities to the departments and agencies and revise existing orders as required by such changes—

(1) The following revised or new Executive orders will be coordinated and issued in fiscal year 1968:

(*a*) Department of Health, Education, and Welfare;

(*b*) Department of Housing and Urban Development; and

(*c*) Department of Commerce.

(2) The following revised or new Executive orders will be coordinate and issued in fiscal year 1969:

(*a*) Department of Transportation;

(*b*) Department of the Interior; and

(*c*) Department of Health, Education, and Welfare revision.

6. *Continuity of State and local governments.*—

(*a*) Assist 18 States and the appropriate OEP regional offices in the preparation, coordination, and ultimate enactment of proposed continunity of Government measures which were indicated as essential and not yet accomplished by the OEP Continuity of Government survey of 1965. This will be accomplished by the following subobjectives—

(1) Provision of appropriate guidance materials and model legislation for use by each of the 18 States;

(2) Development of specific State-by-State goals in coordination with each OEP region; and

(3) Provision of personal specialized assistance to each region and State in support of enactment programs.

7. *Readiness plans.*—

(*a*) Provide day-to-day, detailed guidance and assistance to agencies, generally for the development of readiness plans, procedures, and documentations. Special emphasis will be placed on agencies affected by reorganization and redelegations.

(*b*) Issue current policy guidance as required to insure that all Government readiness planning is current and realistically reflects the national and international conditions which make such planning necessary. This guidance may include essential functions; succession to key officials; predelegation of emergency authorities; emergency organization and staffing; emergency automatic actions; emergency readiness and operations plans; response to warning; emergency communications; emergency operating facilities; and vital records preservation.

(*c*) Issue policy and planning guidance to departments and agencies for assistance to emergency personnel for the care of their dependents in time of national emergency to insure that essential personnel will report to emergency duty stations.

(*d*) Provide policy and guidance for the training and cross-training of OEP personnel in performance of emergency functions, including communications, damage assessment, resource analysis support, security, logistical maintenance, and presentation of information.

(*e*) Prepare emergency action documents on which decisions may be made and actions taken by key officials in case of general war.

(*f*) In coordination with National Archives (1) develop an up-to-date vital records handbook for the guidance of Federal agencies, and (2) conduct the annual survey of vital records programs in the Federal agencies.

(*g*) Develop and issue new guidance to the Federal agencies incorporating criteria and other changes required by DOD for the selection of key (essential) Government employees in relation to commitments in the military Ready Reserve.

8. *National defense executive reserve.*—Recruit from all sectors of the economy a select corps of executives who have the talents and experience essential to the direction of expanded emergency activities and train them in their responsibilities. This will involve—

(*a*) Recruitment of 350 new reservists in each year, fiscal years 1968 and 1969, toward the ultimate goal of 5,000;

(*b*) The fifth national conference to be conducted in fiscal year 1968;

(*c*) One specialized training conference for the standby Office of Emergency Wartime Censorship in fiscal years 1968 and 1969;

(*d*) Regional training sessions in emergency stabilization (two in each region) in both fiscal years 1968 and 1969;

(*e*) The 3,000 reservists, due for redesignation in fiscal year 1968, will be processed;

(*f*) Four regional NDER training conference will be held in fiscal year 1969;

(*g*) NDER manpower data will be developed by EOO and programed by NRAC;

(*h*) Develop preliminary plans for the Sixth Annual National NDER Training Conference; and

(*i*) Develop and issue all necessary documents and instructional materials, including—

(1) The NDER directory;

(2) Administrative procedures; and

(3) Promotional brochure.

9. *Emergency censorship organization.*—Insure the Federal Government's capability to conduct the necessary censorship activities in wartime by—

(*a*) Maintaining at a high level of readiness the standby national censorship organization;

(*b*) Physical adjustments in the censorship emergency operating facility to permit operations under emergency conditions;

(c) Recruitment to full complement the necessary executive reservists; and

(d) Complete the necessary international and Federal agency agreements and coordinate all related planning with other agencies.

OTHER FEDERAL AGENCIES

Mr. EVINS. You state that you have Executive order assignments to the Department of Health, Education, and Welfare, the Department of Housing and Urban Development, and the Department of Commerce. What are you delegating to these agencies, Mr. Director?

Mr. DANIEL. In line with our overall responsibility to coordinate the emergency preparedness of all these Departments, we assign to them what we think they should do to have their programs up to date.

Mr. EVINS. Do they comply with your requests?

Mr. DANIEL. I have hardly had time to find out personally. Mr. Phillips.

Mr. PHILLIPS. Yes, sir; they are most cooperative. Frankly, Mr. Chairman, we get the greatest cooperation on our activities that do not require a large expenditure of funds. This has to do with the kind of facilities I was speaking of a minute ago. In these particular cases we are working with HEW on a new educational assignment which they did not have previously in their order. We are working with them to get a revision there. In terms of housing and urban renewal, because this is a new department we have to take the old HHFA order, redo it, tailor it to the HUD organizations. In terms of the Commerce Department, we have to allow for the changeover to the new Department of Transportation of the emergency transportation function previously in Commerce.

CONTINUITY OF GOVERNMENT

Mr. EVINS. You indicate you have 18 States that you have cooperated with in the presentation of plans for continuity of government. Then you indicate that you have a provision of guidance materials and model legislation for use by each of the 18 States. You suggest a model plan to the States and they adopt it if they want to?

Mr. DANIEL. Yes, sir.

Mr. EVINS. Do you prepare the legislation?

Mr. DANIEL. Yes, sir; we have suggested legislation.

Mr. EVINS. Only 18 States out of the 50 have adopted it?

Mr. DANIEL. No. There are more States than that. All but one State have adopted at least part of the legislation. That one State is Colorado.

Mr. EVINS. You mentioned Mississippi a while ago.

Mr. DANIEL. That is on resource planning, emergency management of resources.

Mr. EVINS. What about your continuity-of-government plans?

Mr. DANIEL. They have plans or are working on plans, some of the legislation that we have recommended, except for one State.

Mr. RICE. In our report to the Joint Committee on Defense Production there is a summation of this legislation.

Mr. EVINS. This shows the status of the continuity-of-government legislation enacted by the States. Just a bird's-eye view of this looks like it is fully covered. Place this in the record.

(The table referred to follows:)

TABLE 4

STATUS OF CONTINUITY OF GOVERNMENT LEGISLATION IN STATE GOVERNMENTS

AS OF JUNE 30, 1967

	CONSTITUTIONAL AMENDMENTS RATIFIED	EMERGENCY LINE OF SUCCESSION FOR: CHIEF EXECUTIVE	OTHERS IN EXECUTIVE BRANCH	LEGISLATURE	JUDICIARY	LOCAL GOVTS	EMERGENCY RELOCATION OF: STATE GOVT	LOCAL GOVT	RECORDS MANAGEMENT & PRESERVATION
* ALABAMA	●	●		●		●	●		
ALASKA		●					●		
ARIZONA	●	●		●		●	●	●	●
ARKANSAS		●	●	●	●	●	●	●	
CALIFORNIA	●	●	●	●		●	●	●	●
COLORADO									
CONNECTICUT	●								
DELAWARE	●	●	●	●	●	●	●	●	
FLORIDA	●	●				●	●	●	
GEORGIA	●	●	●	●	●	●	●	●	
HAWAII		●				●	●	●	
IDAHO	●	●	●	●	●	●	●	●	
ILLINOIS		●	●			●	●	●	
INDIANA						●	●	●	●
IOWA		●	●	●	●	●	●	●	
KANSAS	●	●	●	●	●	●	●	●	
KENTUCKY									
LOUISIANA	●		●	●	●	●			●
MAINE	●	●	●	●		●			●
* MARYLAND	●	●				●	●	●	
MASSACHUSETTS	●	●	●		●	●			
MICHIGAN	●	●	●						
MINNESOTA	●	●		●		●	●	●	●
MISSISSIPPI						●		●	●
MISSOURI	●						●	●	
MONTANA	●	●	●	●		●	●		●
NEBRASKA	●	●	●	●	●	●	●	●	●
NEVADA	●								
NEW HAMPSHIRE	●	●	●	●	●	●			
NEW JERSEY	●	●	●				●	●	●
NEW MEXICO	●	●	●	●	●	●	●	●	
NEW YORK	●	●	●			●	●		
* NORTH CAROLINA	●	●	●			●			●
NORTH DAKOTA	●	●	●			●		●	●
OHIO	●	●	●	●	●	●	●	●	●
OKLAHOMA	●	●	●	●	●	●	●	●	●
OREGON	●	●	●	●	●	●	●	●	
PENNSYLVANIA	●	●	●	●	●	●	●	●	●
RHODE ISLAND	●						●	●	
SOUTH CAROLINA	●	●	●	●	●	●	●	●	
SOUTH DAKOTA	●	●	●	●		●	●	●	
TENNESSEE						●		●	
TEXAS	●	●	●			●			
UTAH	●								
VERMONT		●	●		●	●	●	●	●
* VIRGINIA	●	●		●		●	●		
WASHINGTON	●	●		●		●			
WEST VIRGINIA	●	●	●	●	●	●	●	●	●
WISCONSIN	●	●	●			●			
* WYOMING	●	●					●	●	●
TOTAL	38	39	30	25	18	36	36	32	21

* STATES HAVING ADEQUATE EXISTING AUTHORITY FOR CONTINUITY OF GOVERNMENT LEGISLATION

Mr. EVINS. You have testified about your executive Reserve program. The details are shown on page 52. You say that 3,000 reservists are due for redesignation in 1968 and will be processed. You are bring-

ing in 350 new reservists each year toward an ultimate goal of 5,000. Tell us again how many you have.

Mr. DANIEL. About 4,000.

FIELD SERVICES REGIONAL OFFICES AND OTHER ACTIVITIES

Mr. EVINS. Now, gentlemen, we go to field services regional offices, page 56. No new jobs are requested.

Program planning and evaluation, page 60, no new jobs are requested. You have 12 there.

This staff provides support to the Director on plans and priorities.

It provides guidance to the Federal departments in developing emergency preparedness programs. Is this done annually or continually?

Mr. DANIEL. Continually, is my understanding.

Mr. RICE. Annually, the Program Planning and Evaluation Office works with the State Department, the Defense Department, CIA, in updating the military and nonmilitary defense assumptions on which we base our work. We try to do this annually. This office also is our inspector general for nonmilitary defense work at all levels.

Mr. EVINS. For 1969 you want to update the estimates of potential contingencies, update the statements of long-range goals, and develop a comprehensive program structure.

Pages 60 through 63.

(The pages follow:)

OFFICE OF EMERGENCY PLANNING, SALARIES AND EXPENSES

Program planning and evaluation

Positions:	
Fiscal year 1967 actual	12
Fiscal year 1968 estimate	12
Fiscal year 1969 estimate	12

This staff provides support to the Director and the Planning and Review Committee in their deliberations and judgments on program priorities, program plans, and work to be accomplished via project management. It apprises the Director and Deputy of the status of programs and projects, and identifies matters requiring their attention or the attention of office or staff directors. It develops and maintains an information and progress reporting system to aid in program review and decisions. This staff negotiates with other agencies and prepares for the Director's approval long-range test and exercise programs, and evaluates the effectiveness of tests and exercises conducted by the program offices of OEP. It works with DOD, State, CIA, and other agencies in updating nonmilitary defense assumptions. It also provides secretariat support to the Interagency Emergency Planning Committee and other program development groups as required.

Major accomplishments in fiscal year 1967

1. Provided the Federal departments and agencies with guidance for developing their emergency preparedness program in the form of national objectives and subobjectives for fiscal years 1968–73.
2. Established a revised system for developing OEP programs.
3. Issued programing guidance for the development of OEP programs.
4. Issued revised guidance to the Federal departments and agencies for developing program objectives and for reporting on progress, status, and problems with respect to emergency preparedness programs.
5. Reviewed and evaluated 15 State plans for the emergency management of resources.
6. Maintained the management information system for the Director, OEP.
7. Evaluated 16 tests of State plans for the emergency management of resources.

8. Participated in national and international conferences to develop concept, scope, and design of the NATO-sponsored exercise CIVLOG–69.

Objectives for fiscal year 1968

1. Produce current estimates of potential contingencies and problems to be planned against basic emergency preparedness guidance.
2. Produce statements of long-range goals, mid-range and short-range ob-
3. Compile a Federal 5-year program book summarizing the emergency preparedness programs of the executive branch.
jectives, and current priorities of effort.
4. Compile an OEP program book summarizing the programs of OEP.
5. Make an assessment of the preparedness posture of 15 Federal departments and agencies.
6. Complete the review and assessment of emergency preparedness programs in 25 selected States.
7. Develop or refine standards of performance for individual parts of the OEP program, wherever feasible.
8. Develop and submit to the President, a progress and status report on the civil emergency preparedness program.
9. Conduct an operational readiness exercise in each of the OEP regions.
10. Test and exercise region 2 to function as a national alternate center.
11. Exercise in each State, the resource management plans developed under the Federal contracts through the stage III tests.
12. Conduct a resource management seminar in preparation for the NATO-sponsored exercise CIVLOG–69.
13. Issue initial guidance to Federal agencies for participation in NATO exercises to be held during fiscal year 1969.
14. Schedule and conduct a series of internal tests and contingency exercises.
15. Revise the structure and operating procedures of the IEPC to make it more effective in program planning and management.
16. Develop a NATO civil emergency planning symposium to be conducted at NATO headquarters.

Objectives for fiscal year 1969

1. Update estimates of potential contingencies and problems to be planned against basic emergency preparedness guidance.
2. Update statements of long-range goals, mid-range, and short-range objectives, and priorities of effort.
3. Develop a comprehensive program structure, including the identification of program elements in various Federal departments and agencies, to serve as a framework for planning and coordinating the total emergency preparedness effort.
4. Make evaluative analyses of significant aspects—including program objectives, policies, intraprogram and interprogram balances, and other related matters—of selected emergency preparedness programs to provide the basis for policy direction of the total emergency preparedness effort.
5. Develop, as a pilot project, a planning and programing system for a selected emergency preparedness program which will facilitate fuller integration with the day-to-day program execution and decisionmaking processes of individual Federal departments and agencies.
6. Identify the critical elements of emergency preparedness programs of individual Federal departments and agencies, and establish standards of performance wherever feasible.
7. Establish a pilot system for self-appraisal of emergency preparedness programs by the Federal departments and agencies which recognizes the role of hub agencies and subsidiary agencies in a major resource area.
8. Review and assess the emergency preparedness programs in 25 selected States.
9. Assess the preparedness posture of 15 Federal departments and agencies.
10. Complete the planning, and conduct the U.S. portion of the NATO-sponsored exercise Civlog for the NATO civil wartime agencies.
11. Conduct three contingency gaming exercises involving top level officials.
12. Develop plans for a national exercise.
13. Design and conduct a series of limited tests to evaluate the readiness of civil agencies to respond to a variety of contingencies.

Mr. TALCOTT. If the Capitol was hit by an atomic bomb, do you have plans for moving the Capitol and its functions to some better location like St. Louis or Kansas City?

Mr. DANIEL. I think we will have to go off the record with you there.

Mr. EVINS. Off the record.

(Discussion off the record.)

ADMINISTRATION AND GENERAL COUNSEL

Mr. EVINS. Place in the record pages 65 and 68.

(The pages follow:)

Administration

Positions:	
Fiscal year 1967 actual	40
Fiscal year 1968 estimate	39
Fiscal year 1969 estimate	39

This staff provides logistic, administrative, and management support to the work of the agency in accordance with Government policies and practices and consistent with laws, regulations, and rules relative to Federal funds, personnel, procedures, and practices. It recommends organizational, functional, procedural, staffing, and financial programs and plans for achieving the agency's mission and discharging its responsibilities at maximum effectiveness and lowest cost. It administers financial management, personnel, training, administrative services, security, auditing, procurement, records, and directives management programs.

Major accomplishments in fiscal year 1967

1. Provided necessary administrative support to all agency accomplishments.
2. Planned and began implementation of a career development system that will provide definitive patterns of promotion and professional progress for new employees as well as skill development and promotion opportunities for present employees. The career development program will include—job rotation, formal and on-the-job training, special seminars, counseling, and performance approval.

Objectives for fiscal year 1968 and fiscal year 1969

This is a continuing support service which will be performed with one less position in fiscal year 1968 and fiscal year 1969.

General Counsel

Positions:	
Fiscal year 1967 actual	6
Fiscal year 1968 estimate	6
Fiscal year 1969 estimate	6

The General Counsel provides legal counsel, advice, and assistance to the Director on national security and disaster laws, policies, regulations, problems, and programs, including special Presidential assignments to the Director. He also provides legal advice, guidance, and assistance to all officers and employees in the agency on the administration and operation of programs for which OEP is responsible. He coordinates the preparation of legislation proposed by OEP and the preparation of reports on other proposed legislation, and is responsible for the initiation, preparation or review of submissions to the Attorney General and Comptroller General. He serves as counselor under OEP Regulation 6 (Ethical Conduct); as civil rights coordinator under title VI of the Civil Rights Act; and as equal employment opportunity officer for OEP. He reviews adverse personnel actions.

Objectives for fiscal year 1968 and 1969

This is a continuing support service.

STAFF ASSISTANT FOR HEALTH

Mr. EVINS. You have 39 jobs for administration and six jobs for General Counsel. No increases are proposed.

The staff assistant for Health Division, three positions. Tell us about this function. This is your bloodmobile, Nursing Corps, and these three positions are for the staff?

Mr. DANIEL. Yes.

Mr. EVINS. Place pages 70 through 72 into the record.

(The pages follow:)

Staff Assistant for Health

Positions:

Fiscal year 1967 actual	3
Fiscal year 1968 estimate	3
Fiscal year 1969 estimate	3

The Staff Assistant for Health serves as staff adviser to the Director on policies, plans, and programs for the emergency availability and utilization of national health resources. Similarly, he provides assistance to other Federal agencies and to OEP officials regarding national and international health resources.

The Staff Assistant for Health maintains close working relationships with national medical and health associations, professional health personnel of other Federal agencies, and with health advisory committees; and serves as their principal point of OEP contact in health matters.

Major accomplishments in fiscal year 1967

Coordinated the development by the Public Health Service of the delegate agency Health Resources Annex to the Resource Mobilization Plan for Limited War.

Participated in an interagency review of the civilian emergency health preparedness program for the purpose of developing modifications of the content and administration of the program consistent with current assumptions.

Developed, coordinated, and published Defense Mobilization Order 8540.2 for the national emergency blood program.

Stimulated and coordinated an industrial mobilization survey by the Department of Defense of the potential of the commercial scale plasmapheresis process as a source of plasma for blood fractions during a mobilization.

Objectives for fiscal year 1968

1. Conduct active liaison designed to insure the effective interchange of health manpower resources data among concerned governmental and nongovernmental agencies having emergency preparedness responsibilities and participate in review of the adequacy of the content and format of the National Resource Analysis Center data bank on health manpower and other health resources for supporting the needs of emergency preparedness and planning.

2. Examine all means for improving the utilization and conservation of scarce health manpower with particular stress on measures which will enhance the national emergency health preparedness posture.

3. Assist in the development by public and private agencies of appropriate criteria for guiding those charged with the selection of persons possessing scarce health manpower skills for military service.

4. Participate in continuing review of the impact of limited war mobilization and expanded civilian health programs on the health industry and health services sectors of the Nation's economy with special attention to the implications for emergency health preparedness.

5. Coordinate review of state of operational readiness of Federal, State, and local emergency health standby organizations and plans.

6. Provide for participation by appropriate emergency planning agencies in periodic review of the civilian emergency medical stockpile program.

7. Organize a survey of the adequacy of national emergency health facilities.

8. Initiate a study of the vulnerability of the U.S. health industry to physical damage and interruptions in availability and distribution of certain factors of production.

9. Stimulate cooperation at the national level designed to achieve effective organization at the local level for emergency casualty first aid, collection, and evacuation.

Objectives for fiscal year 1969

Provide a capability to assess objectively the effectiveness of major health programs, governmental and private, in terms of their impact on the Nation's supply of health resources available for emergencies, adequacy of interagency and Federal-State coordination, cost-effectiveness, and other factors bearing on the Nation's health readiness posture.

Mr. EVINS. You have big language on page 72:

Provide a capability to assess objectively the effectiveness of major health programs, governmental and private—

Now, three people can't do this—

in terms of their impact on the Nation's supply of health resources available for emergencies, adequacy of interagency and Federal-State coordination, cost effectiveness, and other factors bearing on the Nation's health readiness posture.

Mr. DANIEL. We simply coordinate the planning and information, put together the information which we get from the other agencies.

Mr. EVINS. Governor, I commend the man who wrote that phrase.

Mr. DANIEL. I will pass along that commendation.

INFORMATION STAFF

Mr. EVINS. You have three positions on information staff. This staff advises the Director, is responsible for press relations, and maintains liaison with the White House on press matters. I expect you need three for all of that. Place page 74 into the record.

(Page 74 follows:)

Information staff

Positions:	
Fiscal year 1967 actual	3
Fiscal year 1968 estimate	3
Fiscal year 1969 estimate	3

This staff advises the Director on means of securing and maintaining general public understanding and acceptance of emergency preparedness and other programs administered by OEP. It is responsible for press relations and for information materials intended for the general public. It participates in planning press and information programs for emergencies. It maintains liaison with the White House on press matters, provides press support for State liaison activities, and assists the Director in his special assignments such as the Cabinet Travel Task Force.

In the event of disaster or national calamity, this Office gathers and provides the press with comprehensive information on Federal relief effort. It provides the Director with early information and reports of disaster or calamity gained by surveillance and interrogation of news sources. It gathers and edits Federal relief information.

Major accomplishments in fiscal year 1967

Assisted the White House and OEP in the preparation of meetings of Governors' White House Conferences with regard to Federal-State relations, national legislative meetings, highway safety, and others.

Assisted and participated in the preparations for Federal-State relations visits to 40 States and traveled with Federal team to each of these States.

Increased the communications capability of Information Office for more immediate and quick response to the public as well as to our regional offices, Government agencies, and State and local offices.

LIAISON STAFF

Mr. EVINS. No new increases are proposed in the liaison staff. I thought the previous office dealt with liaison. You say this liaison staff maintains liaison with Members of Congress, committees, State and local government associations, business, labor, farm, and other national organizations concerned with political, social, and economic activities. Then you state it provides for coordination of the executive branch's participation in NATO civil emergency preparedness activities. It assists the Director in the active partnership with Governors. The Governor testified about his relationship with the Governors. I think this is one of your good activities.

Mr. DANIEL. This liaison staff, of course, could not carry on all this work with just the seven people. We have to borrow from others to help out when they are needed. As you can see, they cover a lot of territory.

Mr. EVINS. On page 81 you have two big areas: Continue work toward the streamlining of NATO-collective nonmilitary defense capabilities and participation in the second NATO-wide civil logistics exercise. What has been accomplished?

Mr. DANIEL. That is what I mentioned to you a minute ago. We accomplished something over the opposition of some of the countries, at our senior committee meeting in Brussels. The committee and also the NATO Council have agreed that they will update their emergency planning for contingencies other than nuclear war. We feel that the other countries will eventually cooperate with us on emergency planning.

DIRECTOR'S OFFICE

Mr. EVINS. Very good. Let's place in the record page 83, the Director's Office.

(The page follows:)

Director's Office

Positions:

Fiscal year 1967 actual	18
Fiscal year 1968 estimate	18
Fiscal year 1969 estimate	18

The OEP Director advises and assists the President in the determination of national nonmilitary defense policies and objectives. The Director acts on behalf of the President in coordinating the Government's entire emergency preparedness effort, and in developing a more active partnership with the Governors and legislative leaders of the States. The Director is a statutory member of the National Security Council. He participates in meetings of the Cabinet by invitation of the President, and chairs special Cabinet meetings for the President, in times of severe emergency. He provides overall direction to the Office of Emergency Planning.

The Deputy Director shares responsibilities with the Director and has full authority to act in his absence. The Deputy Director provides direction to daily operation of OEP and serves as the chairman of the planning committee which is composed of principal OEP officials, supplemented by others as needed. The planning committee considers long and short-range agency goals, program alternatives, projects, and priorities of the agency.

The Director and Deputy Director are assisted by two Assistant Directors who advise on policy matters and carry out special assignments for the Director.

Mr. EVINS. Now let us turn to "Other objects." You show an increase in everything, permanent positions, temporary positions, intermittent

employment is up from $103,000 to $104,000, part-time employment goes from $13,000 to $14,000, and overtime from $17,000 to $19,000. Then you have invitational travel which goes up from $24,000 2 years ago to $38,000. Is this because of the executives reserves?

Mr. RICE. Yes, sir; plus some of these specialists that we need.

DISASTER RELIEF

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Administration	821	903	94
	2. Aid to disaster areas	13,199	41,884	23,085
	Total program costs, funded	14,020	42,787	24,025
	Change in selected resources [1]	7,956		
10	Total obligations	21,976	42,787	24,025
	Financing:			
17	Recovery of prior year obligations	−3,902	−10,000	−4,450
21	Unobligated balance available, start of year	−12,586	−19,062	−6,275
24	Unobligated balance available, end of year	19,062	6,275	1,700
40	New obligational authority	24,550	20,000	15,000
	Relation of obligations to expenditures:			
10	Total obligations	21,976	42,787	24,025
70	Receipts and other offsets (items 11 to 17)	−3,902	−10,000	−4,450
71	Obligations affecting expenditures	18,074	32,787	19,575
72	Obligated balance, start of year	79,685	44,287	37,647
74	Obligated balance, end of year	−44,287	−37,647	−25,418
90	Expenditures	53,472	39,427	31,804
	Expenditures are distributed as follows:			
01	Out of current authorizations	53,472	9,000	4,000
02	Out of prior authorizations		30,427	27,804

See footnote at bottom of page.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

ALLOCATION TO OFFICE OF EMERGENCY PLANNING

	Personnel compensation:			
11.1	Permanent positions	464	530	565
11.3	Positions other than permanent	43	55	55
11.5	Other personnel compensation	6	5	5
	Total personnel compensation	513	590	625
12.0	Personnel benefits	36	44	47
21.0	Travel and transportation of persons	107	101	101
22.0	Transportation of things	7	4	4
23.0	Rent, communications, and utilities	49	53	51
24.0	Printing and reproduction	6	6	6
25.2	Services of other agencies	11,761	21,984	13,185
26.0	Supplies and materials	3	4	5
31.0	Equipment	1	1	1
41.0	Grants, subsidies, and contributions	9,492	20,000	10,000
99.0	Total allocations	21,976	42,787	24,025

PERSONNEL SUMMARY

Total number of permanent positions	51	51	51
Full-time equivalent of other positions	10	12	12
Average number of all employees	51	57	59
Average GS grade	10.0	10.2	10.2
Average GS salary	$11,099	$11,792	$11,900

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $19,300,000 (1967 adjustments, −$3,902,000): 1967, $23,354,000; 1968, $23,354,000; 1969, $23,354,000.

Mr. EVINS. Let us take a look at "Disaster relief." Place in the record pages 92 through 99.

(The pages follow:)

Disaster relief

Estimate for 1969, $15 million.

GENERAL STATEMENT

The Federal Disaster Act, Public Law 81–875, empowers the President to supplement the efforts and resources of States and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major disasters.

The President has delegated to the Director of the Office of Emergency Planning the responsibility for coordinating Federal assistance under the act. Upon the declaration of a major disaster, the OEP administers funds allocated for the State from the President's disaster fund, and directs and coordinates disaster assistance by other Federal agencies.

In a declared major disaster area, Federal aid is made available to help a State and its political subdivisions with debris clearance, emergency protective or health measures, with temporary housing, or to make emergency repairs to or temporary replacements of essential public facilities such as roads and bridges, sewer and water systems, and public buildings.

The recently enacted Disaster Relief Act of 1966, Public Law 89–769, provided for additional assistance for areas suffering a major disaster. It underscored the Office of Emergency Planning's role in the coordination of all Federal disaster assistance activities. It also created additional demands on the President's disaster fund in that it requires OEP to share the costs of repair and reconstruction of certain public facilities under construction at the time of a major disaster.

The past few years have seen a large number of major disasters, a number of which required considerable expenditures of Federal disaster relief funds. In the past 5 fiscal years there were 96 presidentially declared major disasters. Declarations were made for 41 States as well as Puerto Rico, the Virgin Islands, Guam, American Samoa and the Trust Territories of the Pacific Islands. Allocations totaling $312,786,750 were made for disasters occurring in this period. There were certain unusually severe disasters: The Alaskan earthquake in March 1964 resulted in allocations of Public Law 875 funds totaling $57,600,000; the Christmas week 1964 flooding in the Northwest was the basis for Presidential declarations for 5 States and total allocations exceeding $54,000,000; Hurricane Betsy in September 1965 has been described as the "hurricane of the century." with Louisiana especially hard hit and Public Law 875 work costing $39,750,000 accomplished in the State.

The table below lists the number of major disaster declarations and the dollars allocated for Public Law 875 relief and recovery work for those disasters in the past 5 fiscal years:

Fiscal year	Number of major disasters	Funds allocated
1963	23	$39,166,000
1964	18	72,927,000
1965	29	123,093,000
1966	18	65,030,750
1967	8	12,570,000
Total	96	312,786,750

As indicated, there were just eight major disaster declarations in fiscal year 1967, with Federal funds in the amount of $12,570,000 made available for Public Law 875 work in the declared areas. During the fiscal year, there also were a number of disaster emergencies that did not qualify as major disasters within the intent and scope of Public Law 875. Seven requests for major disaster assistance were turned down on the basis that they were not of such severity and magnitude to warrant Presidential declarations.

It is obvious that disasters vary in number and severity which cannot be predicted. For budget purposes, annual averages can only be a consideration.

Our fiscal year 1969 request for $15 million will not be sufficient if there is an unusually severe disaster or series of disasters.

A recapitulation of fiscal year 1967 major disaster activity follows:

The first declaration of the fiscal year was made on July 9, 1966, for storm and flood damages in North Dakota. It was the second declaration for the State in a 4-month period, for, in March 1966, there also was a flood disaster resulting in a Presidential declaration of a major disaster.

In September, a major disaster was declared for Nebraska because of torrential rains and flooding. Also in September, Hudspeth County, Tex., was declared a major disaster area because of unprecedented rain and serious property damage.

In late November and early December 1966, there was general rainfall over the entire Central Valley of California amounting to about twice the normal amounts. It resulted in major flooding and severe damages. The President declared a major disaster for California on January 2, 1967.

Three major disasters were declared in March 1967. Heavy spring rains in mountainous eastern Kentucky and over the State of West Virginia caused numerous rivers and streams to flood, causing widespread damage, especially to county and local roads and bridges. The President approved Public Law 81–875 assistance for both States.

A major disaster was declared for the Trust Territory of the Pacific Islands, also in March, because of damages caused by Typhoon Sally. Koror and Babelthuap, two small islands in the Palau district of the trust territory, were devastated when typhoon winds roared through the islands on March 2. Federal disaster funds have been provided for the repair or replacement of schools, dispensaries, and other public facilities of the territorial government.

On April 21, a series of tornadoes in the Midwest left in their wake a tragic toll of human lives, suffering, and property damage. Hardest hit were northeastern counties of Illinois where the tornado toll read: 53 dead and 952 injured; 373 homes destroyed and 1,160 damaged.

At the request of the Governor of Illinois, a major disaster was declared by the President in order to provide recovery and rehabilitation assistance in the tornado-damaged areas. Federally financed assistance was furnished to aid in the massive debris-clearance tasks and to repair damaged public facilities.

Since fiscal year 1967 was a relatively quiet year with respect to both the number and severity of natural disasters, OEP took advantage of the reduced activity to devote increased attention to a review and evaluation of State and Federal disaster assistance plans and programs.

A significant development in this period was the enactment of the Disaster Relief Act of 1966, Public Law 89–769, which liberalized existing Federal disaster assistance programs and gave statutory reaffirmation to OEP's role in the overall coordination of the Federal response to disaster.

In November 1966, the OEP convened an interagency conference to review the authorities and responsibilities of Public Law 89–769 and to insure that the appropriate Federal agencies were taking the steps necessary for its implementation. Subsequently, State and regional meetings were held with State and Federal agency officials to review, discuss, and plan disaster assistance programs and procedures.

Section 13 of Public Law 89–769 directed OEP to conduct an intensive study and investigation to determine what additional or improved air operation facilities are needed to prevent or minimize the loss of life and property resulting from forest or grass fires.

A special study group consisting of OEP staff assisted by State and Federal forestry consultants conducted the investigative study. The report with recommendations was submitted to the Congress in May 1967. The study revealed that Federal, State, and local governments have well-accepted plans for fire prevention and suppression, and that additional legislation is not required if sufficient funds are made available under laws now in effect. The recommendations generally were to implement existing legislation by adequate financing.

In fiscal year 1968, we are continuing to provide direct or financial assistance under Public Law 875 in declared major disaster areas. We are also giving increased effort to planning and preparedness activities that will increase readiness and minimize the effect of a disaster.

Our OEP disaster assistance procedural and guidance manuals are being revised and reissued. An interagency committee is being established at the national level to provide a point of liaison and coordination in preparedness activities, and in emergency operations as necessary.

In fiscal year 1969, we shall continue a reexamination of the disaster assistance program in the interest of developing new procedures and criteria that will afford more efficient and expeditious disaster relief. There will be an ongoing review and evaluation of disaster plans and organizations. Continued emphasis will be given to training, seminars, postdisaster critiques, disaster studies, and the overall coordination of Federal agency disaster relief activities. No increase in staffing is proposed for fiscal year 1969.

Already in fiscal year 1968, seven new major disasters have been declared. Allocations from the President's Disaster Fund in this period total $32 million for these disasters and for prior-year disasters. Two of these disasters deserve special mention because of their magnitude.

A Presidential declaration was made with respect to Fairbanks, Alaska, and adjacent areas because of severe damages resulting from the flooding Chena and Tanana Rivers. Virtually all of Fairbanks was inundated. Allocations totaling $7 million have been made for Public Law 875 emergency recovery work.

Hurricane Beulah, which hit southern Texas, has been rated by the Weather Bureau as one of the three most destructive hurricanes in American history. The President issued a major disaster declaration for Texas on September 28, 1967, and thus far, $10 million has been allocated from the President's Disaster Relief Fund for relief and restorative work in the area.

The attached table indicates our current estimate of funds required for disasters already declared. We estimate that approximately $16.8 million ($3 million during the remainder of fiscal year 1968 and $13.8 million during fiscal year 1969) is needed for Public Law 81–875 and Public Law 89–769 costs in these past disasters.

DISASTER RELIEF

SUMMARY OF REQUIREMENTS FOR DECLARED DISASTERS AS OF FEB. 29, 1968

State and disaster Number	Allocations from President's disaster relief fund to date (fiscal year 1968 and prior years)	Estimated additional allocation required	
		Fiscal year 1968	Fiscal year 1969
California (183)	$35,000,000	$1,500,000	$13,400,000
Minnesota (188)	12,150,000	250,000	
Colorado (200)	19,700,000	50,000	
Louisiana (208)	37,000,000	720,000	
California (211)	2,900,000	30,000	
Nebraska (228)	1,250,000	200,000	
Idaho (231)	250,000	(1)	
New York (233)	300,000	225,000	
North Carolina (234)	400,000	50,000	
Total		3,025,000	13,400,000
Plus 3 percent administrative expense		90,750	402,000
Total requirements		3,115,750	13,802,000
Balance in President's fund as of Feb. 29, 1968		18,401,257	
Estimated recoveries		1,000,000	4,450,000
Fiscal year 1968 total known requirements		3,115,750	13,802,000
Available for contingencies during remainder of fiscal year 1968		16,285,507	
Request for fiscal year 1969			15,000,000

[1] Undetermined.

ALLOCATIONS MADE, FISCAL YEAR 1967

[In thousands of dollars]

State	Type of disaster	Date declared	Allocated
Louisiana	Hurricane Betsy	Sept. 10, 1965	7,000
Mississippi	do	Sept. 25, 1965	265
American Samoa	Typhoon	Feb. 10, 1966	675
Minnesota	Flooding	Mar. 22, 1966	125
North Dakota	do	Mar. 23, 1966	700
Arizona	do	Apr. 30, 1966	1,120
Kansas	Tornadoes	June 10, 1966	2,700
North Dakota	Severe storms and flooding	July 9, 1966	475
Nebraska	Heavy rains and flooding	Aug. 31, 1966	845
Texas	do	Sept. 27, 1966	100
California	Severe storms and flooding	Jan. 2, 1967	5,000
West Virginia	Flooding	Mar. 13, 1967	1,250
Trust Territory	Typhoon Sally	Mar. 21, 1967	750
Kentucky	Severe storms and flooding	Mar. 27, 1967	250
Illinois	Tornadoes	Apr. 25, 1967	500
Total allocations for disaster assistance, fiscal year 1967.			21,755

ALLOCATIONS MADE, FISCAL YEAR 1968, AS OF FEB. 29, 1968

Alaska	Earthquake	Mar. 28, 1964	2,600
Montana	Severe storms and flooding	June 9, 1964	1,300
Nevada	do	Jan. 18, 1965	876
Louisiana	Hurricane Betsy	Sept. 10, 1965	2,750
California	Severe storms and flooding	Jan. 3, 1967	2,000
Trust Territory	Typhoon	Mar. 21, 1967	1,400
Kentucky	Severe storms and flooding	Mar. 27, 1967	150
Illinois	Tornadoes	Apr. 25, 1967	500
Nebraska	Severe storms and flooding	July 18, 1967	1,250
Kansas	Tornadoes, severe storms and flooding	July 18, 1967	1,250
Alaska	Severe storms and flooding	Aug. 17, 1967	7,000
Idaho	Forest fires	Aug. 30, 1967	250
Texas	Hurricane Beulah	Sept. 28, 1967	10,000
New York	Severe storms and flooding	Oct. 31, 1967	300
North Carolina	Severe ice storm	Feb. 10, 1968	400
Total allocations for disaster assistance, fiscal year 1968 (July 1, 1967–Feb. 29, 1968).			32,026

CARRYOVER

Mr. EVINS. You are asking for $15 million.

Disasters vary in number and severity, and nobody can predict when they may come. Now, what is the amount of carryover that you have in this fund?

Mr. RICE. As of the moment, $18 million.

Mr. EVINS. You have $18 million in the fund, and you are asking for an increase of $15 million more?

Mr. RICE. The $18 million is all obligated, or will be.

Mr. EVINS. You have $18 million carryover, but most of it is obligated?

Mr. RICE. Yes, that is our estimate.

Mr. WYMAN. Mr. Chairman, just one question. Are riots included in this, possible riots?

Mr. DANIEL. No.

Mr. EVINS. I think the new Director, the Governor, ought to give some attention to this area of concern.

Mr. DANIEL. Gentlemen, you consider it with me, please, because as I have said there has been disagreement in the past. My immediate predecessor had a feeling that you could interpret the language to cover a manmade disaster. I do not think so. I think the history of your act makes it clear that you are talking about natural disasters. If you want to broaden it, I hope the language will say what you want us to cover, and that you will provide the money, too.

Mr. EVINS. This $15 million is for natural disasters?

Mr. DANIEL. That is correct.

Mr. EVINS. They have a bill in Congress pertaining to riot insurance for stores that are destroyed. Insurance companies don't want to take the risk. They want Uncle Sam to pick up the tab.

Mr. DANIEL. You know this title of Emergency Planning makes a lot of people think, "Well, that Office ought to just plan for all emergencies." There are some that you have not authorized us to plan for and put money into if they occur, and this is one of them, in my opinion.

Mr. WYMAN. Have you made a legislative recommendation in this regard?

Mr. DANIEL. I have not. Before you came in, I pointed out that the Kerner report suggests broadening our authority.

Mr. WYMAN. Thank you.

Mr. EVINS. Look at page 98. It looks like "Available for contingencies" during the remainder of 1968 is $16,285,507.

Mr. RICE. For example, Mr. Chairman, we have a potential payment of $13,400,000 for the Placer County disaster in California on which the first voucher just came in 3 weeks ago.

Mr. EVINS. We know about the one in Texas, Beulah; we know about those in Alaska. What about this one in Placer County?

Mr. RICE. This one will be acted on under Public Law 769, otherwise known as the Bayh bill.

Mr. EVINS. Doesn't the President have to declare these areas a national emergency before this fund is available?

Mr. DANIEL. That is correct.

Mr. EVINS. Has Placer County been declared?

PUBLIC LAW 769

Mr. RICE. It has been declared eligible under Public Law 769.

Mr. EVINS. What is that?

Mr. PHILLIPS. Section 9, Mr. Chairman of Public Law 769 in effect amends our Public Law 875, the Major Disaster Act, in that it says we shall reimburse State and local entities of government up to 50 percent of the cost of essential public facilities of certain types which are enumerated.

Mr. EVINS. 50 percent of the cost of public facilities?

Mr. PHILLIPS. Which are incomplete at the time they are damaged. This is the significant difference. Under Public Law 875, we can reimburse a State or local governmental entity for the full damages, full

cost of repair or replacement of an essential public facility. That has been interpreted as a facility in use at the time of the disaster. Section 9 of the Public Law 769 was passed by the Congress to take care of some seven or eight specific types of facilities which were incomplete at the time they were damaged.

Mr. DANIEL. They were being built when they were destroyed.

Mr. EVINS. Certain types can be reimbursed 100 percent and other types 50 percent. Basically, tell us the different categories.

Mr. PHILLIPS. The difference is one is complete and one is incomplete. The incomplete ones are still the responsibility of the contractors, which is the normal way of building such facilities, by private contract. So that we can reimburse the local government up to 50 percent of the loss which was not covered by insurance, or not otherwise provided for, so that the local government can reimburse the contractors. Now, in this Placer County situation in California there was a very serious disaster and it damaged some facilities that were incomplete, which are now complete, by the way, and are in use. This is an old situation. as Governor Daniel indicated. We are now getting applications in on it.

Mr. EVINS. Do you think that most of your unobligated funds will be obligated in 1968?

Mr. RICE. Yes.

Mr. EVINS. The Governor testified you cannot tell the number or severity of the disasters.

Mr. DANIEL. That is right.

Mr. EVINS. You need some money in the bank in reserve.

Mr. DANIEL. Yes. We usually get some supplementals. We withdrew our supplemental request this year for $10 million.

Mr. EVINS. Governor, we like to accommodate you, but if we can give you enough funds now and not have a supplemental, why, that is better for all concerned, is it not?

Mr. DANIEL. It would be better.

CONSULTANTS

Mr. MARSH. Thank you, Mr. Chairman.

Going back to the first function of OEP, you mentioned in your statement that you had certain in-house research being done with the assistance of expert consultants. Can you furnish for the record the names of those consultants?

Mr. DANIEL. Yes, we can.

(The information follows:)

The following consultants and experts on the rolls of the Office of Emergency Planning as of March 5, 1968, are available in fiscal year 1968 as consultants and members of advisory committees to bolster the agency's in-house research.

Less than 4 man-years of consultant time is represented by this list, which includes 31 consultants serving without compensation.

Anshen, Melvin L.
Babbitt, Theodore
Bannister, Ray K.
Barnett, Harold J.
Belsley, G. Lyle
Bleicken, Berhard D.
Bowman, Dean O.
Brock, Robert L.
Butler, William F.
Chesley, John W., Jr.
Christensen, Ronald A.
Clark, Robert L.
Crane, Martha A.
Crithfield, Brevard E.
Danziger, Sidney
Edwards, India T.
Eisenpreis, Alfred
Elliott, Warren G.
Ewing, Sam M.
Faucett, Jack G.
Fogle, E. Edgar
Fox, Bertrand
Frank, Howard
Fritz, Wilbert G.
Ginsberg, Felix E.
Harvey, Donald R.
Holub, David C.
Horton, H. Burke
Hough, Robbin R.
Ives, J. Russell
Jones, Leon H.
Jorgenson, Dale W.
Kaplan, William S.
Kossak, Carl F.
Kroger, Marlin G.
Kuhl, William W.
Lieberman, Morris A.
Lovejoy, Wallace F.
McClure, Charles K., Jr.
McCullough, John S.
Makris, James
Martin, John H.
Moore, Frederick T.
Muchin, Jacob
Nelson, Otto L.
Novick, David
Peter, Hugh M.
Peterson, James W.
Pierce, Allen E.
Pogue, Henry E.
Powell, Lloyd M.
Remley, Ralph D.
Renz, Oscar F.
Rock, Vincent P.
Sabatos, John O.
Schnitzler, William F.
Shaw, Seth T.
Silbert, Myron S.
Small, Belford A.
Smith, Harvey A.
Solomon, Herbert
Sonne, Richard B.
Steiglitz, Kenneth
Steiner, George A.
Stock, Fred J.
Taylor, Lauriston S.
Weiner, Peter E.
Wilson, Leslie J.

COMPUTER OPERATIONS

Mr. MARSH. Could you furnish for the committee a general outline of the computer capability that you have, its costs, whether or not it duplicates work being done currently in Defense or CIA or other agencies, and the number of personnel that you have engaged, the number of hours those computers work?

Mr. DANIEL. Yes. You want that furnished for the record or do you want Mr. Truppner to speak to it now?

Mr. MARSH. All right.

Mr. TRUPPNER. I can say this: that we have 14 positions shown in the budget directly concerned with computer operations and direction. Then, as you know, the Corps of Engineers provides us operating support in the way of programers, statisticians, and machine operators, who work under our direction, under the title of the Mathematical Computation Laboratory. The two computers that are operative are the CDC–3600 which operated at slightly over 4,000 hours in calendar year 1967, and the new Univac–1108 which we have not accepted officially as yet. Consequently, it is operating essentially on a debugging basis. We have neither accepted nor paid the company for this computer.

Mr. MARSH. Are you having any trouble with encouraging or obtaining manufacturers to produce sufficient quantities of ordnance and ammunition?

Mr. TRUPPNER. That is not a serious problem, sir. As a matter of fact, what has happened in the past 12 to 18 months is a very substantial increase in the manufacturers of munition and materiel, for assistance from the personnel of the Business and Defense Services Administration, the Commerce Department, in the obtaining of necessary raw materials, components and subassemblies for the manufacture of ammunition and other military equipment.

Mr. MARSH. Finally, going back to the question that the chairman addressed to you at the beginning of the hearing where he set out the number of materials and other items of American production that are being shipped to Communist countries, the satellites, and to the Soviet Union, which I assume is under the policy of the bridges to the east, in your assessment of the national ability to reespond to meet these emergencies, how do you reconcile this type of support by supplying the sinews of war to the countries and area of the world that in effect are counterproducing the emergencies for which you have the obligation to plan against?

Mr. DANIEL. I cannot. I am in no position to justify it. That is not within our jurisdiction. We do not pass on this.

Mr. TRUPPNER. Governor, I might mention, however, that there are inputs into these decisions that are not always easy to discern on the surface. For example, one question is whether they can buy the same material for the same price elsewhere, anyway. So that if we did decide not to ship it, it wouldn't have any effect on the war potential at all. I know that in some cases, for example, material is shipped so as to reduce the necessity for the receiving country to create their own production facilities to produce it themselves, with the thought that in the long run the trade-off is to the national interest of the United States.

Mr. DANIEL. But in reply to Congressman Marsh's question, do we make any of these decisions?

Mr. TRUPPNER. No.

Mr. DANIEL. Is our Office cleared with at all?

Mr. TRUPPNER. We participate and are consulted, but do not make these decisions.

Mr. DANIEL. Where we need the materials, that is where we are consulted.

Mr. TRUPPNER. We certainly make a contribution with respect to the national security aspects of the material, and we frequently participate in interagency discussions that lead to decisions, but this decisionmaking responsibility is not ours.

Mr. MARSH. But you do make recommendations?

Mr. TRUPPNER. Yes, sir.

Mr. DANIEL. We are going to check the list that you mentioned to see whether or not we should express ourselves.

Mr. EVINS. Mr. Pryor, are there any questions?

Mr. PRYOR. No, sir.

Mr. EVINS. Mr. Wyman?

Mr. WYMAN. Governor, do you make recommendations in the course of the performance of your work that relate to the Department of Defense? I mean emergency planning; do you sometimes say that perhaps the Defense Department ought to consider this and that, thus and so, in what you recommend to the President?

Mr. DANIEL. Yes.

PENTAGON DISPERSAL

Mr. WYMAN. Have you ever made a recommendation that the Pentagon be dispersed, the functions that are all centered in the Pentagon be dispersed in the interest of the national security? Of course, I do not mean scattered to the four winds.

Mr. DANIEL. This Office has worked with all Federal agencies on dispersal but Defense has its own plans and they have worked them out themselves. Would you add anything to that, Mr. Phillips?

Mr. PHILLIPS. We advise and assist the military departments in the same way we have civilian departments on the aspects of readiness. The instructions and guidance issued by OEP are instructions and guidance to Defense in terms of the readiness of the civilian aspects of the Department of Defense.

Mr. WYMAN. But you relate directly and primarily to the civilian side?

Mr. PHILLIPS. Nonmilitary aspects completely.

Mr. DANIEL. They are on their own on this, wouldn't you say, as far as planning for their dispersal, as to what kind of installations they have?

Mr. PHILLIPS. The question of whether the Pentagon should be dispersed; that is entirely correct.

COMPUTER OPERATIONS

Mr. TALCOTT. Could you put in the record or give me an idea of how much you have invested in computers?

Mr. TRUPPNER. OEP does not invest directly in computers. Our computers are funded through a classified budget of the Defense Department and made available for our use.

Mr. TALCOTT. Whatever you have, you are only using less than half time. This seems to be an extravagance to me, especially if you have very much invested in computers.

Mr. TRUPPNER. If we may go off the record?

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. TALCOTT. You said that you use it for 4,000 hours; that is less than half the year, is it not?

Mr. RICE. No, sir. The computer is operated on a two-shift basis, 5 days a week, all year long.

Mr. TALCOTT. This is a matter that needs a closer look. The Pentagon has computers running out of their ears and the surplus here is used less than half the time.

Mr. EVINS. A lot of sins are committed in the name of national defense.

Mr. TALCOTT. Also, maybe we should be glad that you do not have the authority to make the decisions about purchasing or selling to enemy countries when they can buy from another country, if the only reason for us selling is because our enemy can purchase it from someplace else.

Mr. TRUPPNER. I merely mentioned that as an input that goes into the decisionmaking.

Mr. TALCOTT. I just happen to disagree very strongly with that basis for trading with our enemies.

Mr. EVINS. Governor, you made reference to the fact that we were going to supply you with the list. We hope that you will acquire the list from the Secretary of Commerce.

Mr. DANIEL. Yes, sir.

Mr. EVINS. That is, the list of materials. Give it your best thought and judgment. Off the record.

(Discussion off the record.)

Mr. EVINS. We wish this important agency a lot of good luck. You have a very important mission.

Mr. DANIEL. Thank you very much, Mr. Chairman and members of the committee.

OFFICE OF TELECOMMUNICATIONS MANAGEMENT

WITNESSES

JAMES D. O'CONNELL, SPECIAL ASSISTANT TO THE PRESIDENT FOR TELECOMMUNICATIONS/DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

COLE A. ARMSTRONG, DEPUTY DIRECTOR

JAMES H. GREEN, ASSOCIATE DIRECTOR (RESEARCH AND TECHNOLOGY)

WILLIAM E. PLUMMER, ASSOCIATE DIRECTOR (FREQUENCY MANAGEMENT)

WILL DEAN, SPECIAL ASSISTANT TO THE ASSOCIATE DIRECTOR (FREQUENCY MANAGEMENT)

V. F. EVANS, DEPUTY ASSOCIATE DIRECTOR (NATIONAL TELECOMMUNICATIONS)

COL. H. R. JOHNSON, ASSISTANT DIRECTOR, PROGRAM PLANNING

RALPH L. CLARK, SPECIAL ASSISTANT FOR INTERNATIONAL TELECOMMUNICATIONS STUDY

CHARLES E. LATHEY, SPECIAL ASSISTANT FOR FEDERAL-STATE AND MOBILIZATION COMMUNICATIONS

JOHN J. O'MALLEY, LEGAL COUNSEL

LEON J. FISHKIN, ASSISTANT FOR LEGISLATIVE AND MEDIA LIAISON

J. RAY O'CONNELL, EXECUTIVE ASSISTANT

Salaries and Expenses

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Telecommunications management	1,067	1,330	1,186
	2. Research and development	306	719	800
10	Total program costs, funded—obligations	1,373	2,049	1,986
	Financing:			
21	Unobligated balance, start of year		−119	
24	Unobligated balance available, end of year	119		
25	Unobligated balance lapsing	90		
	New obligational authority	1,582	1,930	1,986
	New obligational authority:			
40	Appropriation	1,600	1,945	1,986
41	Transferred to other accounts	−18		
43	Appropriation (adjusted)	1,582	1,945	1,986
45	Proposed transfer to other accounts for pay increases		−15	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	1,373	2,049	1,986
72	Obligated balance, start of year	355	309	387
74	Obligated balance, end of year	−309	−387	−413
77	Adjustments in expired accounts	−12		
90	Expenditures	1,407	1,971	1,960
	Expenditures are distributed as follows:			
01	Out of current authorizations	1,407	1,662	1,573
02	Out of prior authorizations		309	387

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	Personnel compensation:			
11.1	Permanent positions	662	828	866
11.3	Positions other than permanent	34	61	66
11.5	Other personnel compensation	6	6	6
	Total personnel compensation	702	895	938
12.0	Personnel benefits	49	62	69
21.0	Travel and transportation of persons	27	34	34
22.0	Transportation of things	1	2	2
23.0	Rent, communications, and utilities	195	240	58
24.0	Printing and reproduction	30	18	18
25.1	Other services	306	719	800
25.2	Services of other agencies	46	51	44
26.0	Supplies and materials	12	18	15
31.0	Equipment	5	10	8
99.0	Total obligation	1,373	2,049	1,986

PERSONNEL SUMMARY

Total number of permanent positions	70	70	70
Full-time equivalent of other positions	3	3	3
Average number of all employees	58	66	68
Average GS grade	10.1	9.8	9.8
Average GS salary	$11,802	$12,304	$12,408

Mr. Evins. The committee will come to order.

We have with us this afternoon our friends of the Telecommunications Service, headed by James D. O'Connell and Mr. Cole Armstrong, Deputy Director. Mr. Green is Associate Director for Research and Technology; Mr. Plummer, Associate Director for Frequency Management; Mr. Dean is special assistant, and Mr. V. F. Evans is a Deputy Associate Director for National Telecommunications; Colonel H. R. Johnson, Assistant Director; Mr. Ralph Clark, special assistant for international telecommunications study; Mr. Lathey is a special

assistant for Federal-State and mobilization communications; Mr. John J. O'Malley is legal counsel. Mr. Leon Fishkin is assistant for legislative and media liaison; Mr. J. Ray O'Connell is the executive assistant.

Mr. JAMES O'CONNELL. I hasten to say, Mr. Chairman, we are not related in any way. There is no nepotism going on here.

Mr. EVINS. It is a good name and I have no objections to family relationships. I think they are fine.

We will be pleased to hear your statement in justification of your appropriation request.

Mr. JAMES O'CONNELL. Mr. Chairman and Mr. Jonas, distinguished members of this committee, I appreciate this opportunity of briefing you on our budgetary needs for the fiscal year beginning next July 1.

I have been encouraged each year by the sympathy and understanding which I have received from this committee, by your counterpart in the Senate, and by this administration. As a result, we have received modest but significant annual increases in our budget. This has enabled us to begin to construct the organization and the competence with which to make inroads on the increasingly complex and important tasks which confront us—to identify the major problems in telecommunications and to start moving toward solutions.

A sense of honesty, however, demands that we measure this progressive increase in capability against the magnitude of the tasks—which are not being adequately done—tasks whose impact upon the social and economic life of the Nation has become so great that a Presidential task force has been organized to study the legal, regulatory, and organizational framework in which we are trying to apply telecommunications to our national needs and to the needs of world society. Mr. Chairman, this is a rather long statement.

Mr. EVINS. You may place the entire statement in the record if you wish, and summarize or highlight it as you wish.

GENERAL STATEMENT

Mr. JAMES O'CONNELL. Very good, sir. I will go through it in very much abbreviated form.

During the past 4 years we have dedicated ourselves to the task of identifying the problems and trying to do something about them. We have passed the point of problem definition and, in a sense, the task force now constitutes a crash effort to enable us to catch up with the accumulated backlog of unresolved issues.

There is no question but that we should be trying to obtain an unprecedented augmentation of our resources this year, but we realize that the practical nature of our situation in respect to national priorities is such that it would be unreasonable to expect it and that we should be prudent in our requests.

We therefore are not asking for an increase over last year's budget despite the needs which exist. We will continue to concentrate on our top-priority problems. We will move ahead on other important problems which we face, and we will anticipate picking up the ball which the task force will hand us in terms of policy recommendations which will have to be analyzed and implemented.

AREAS OF PRIORITY EFFORT

I wish to say just another word about the President's task force and then talk about our concerns and activities in respect to the frequency spectrum, the national communications system, and Federal-State cooperation in telecommunications. These are issues of utmost importance to us—and while there are many other important problems, these are the ones we hold in the highest priority.

THE PRESIDENT'S TASK FORCE ON COMMUNICATIONS POLICY

The President's task force is an unprecedented investigative body in telecommunications. It has a very broad, open-ended charter. In his August 14 message to the Congress, the President underscored specific telecommunications problems, complex, critical, interrelated, bearing heavily upon the national interest, upon economic and social political growth, not only within our own Nation but in all nations of the world, problems related to national and international law, regulatory practices, telecommunications industry structure, especially in the international field, and to the Federal Government's organization in telecommunications.

In other words, a basic look at the whole telecommunications picture as it exists today, and if and how it should be restructured for the future.

I should also say that for the past 4 or 5 months the resources of my office have been devoted very largely to assisting the task force in its comprehensive investigations in which they are proceeding from the identification of problems which we did, identifying others, taking a broader look, and I might say that they are doing what we should have been doing continuously had we the resources and personnel to have done so. Our resources have been made available to the task force and I estimate that between 75 and 100 percent of the time of all of the key personnel in my office is devoted to supporting task force requirements.

THE FREQUENCY SPECTRUM

A word on the frequency spectrum. I have in every appearance before this committee emphasized the importance of this problem and I am sure the committee fully recognizes it. The problem is a far more difficult one than my understanding of it almost 4 years ago. We have consistently devoted the bulk of the resources of the office, including 80 percent of the funds available for contract study, in coping with the problem, in getting better understanding, in trying to arrive at a clear picture of what is going to have to be done to improve the basic situation. And we intend to do the same next year, that is, the preponderance of our effort will be devoted to taking the steps that we feel needs to be taken to work toward a solution of this problem.

Mr. JONAS. May I interrupt there?

Mr. JAMES O'CONNELL. Yes, you certainly may, Mr. Jonas.

Mr. JONAS. Is not the problem one of making a decision instead of a study? You know somebody is going to get hurt.

Mr. JAMES O'CONNELL. Not necessarily.

Mr. JONAS. I do not think you can solve this problem without impinging upon the so-called rights of a lot of people that want to use this spectrum.

Mr. JAMES O'CONNELL. The simple way of looking at it is that you just take something away from somebody that has it and give it to somebody else.

Mr. JONAS. That is what I say.

Mr. JAMES O'CONNELL. That is really not the heart of the problem, if I may say so.

Mr. JONAS. There is just not enough room for everybody, is there?

Mr. JAMES O'CONNELL. There is more room that we have not used.

Mr. JONAS. The FCC has just split up some channels.

Mr. JAMES O'CONNELL. That is right. They have made 300 percent more channels available to the police forces of the country, for example, by channel splitting and reassignment.

Mr. JONAS. Did you advise them in that?

Mr. JAMES O'CONNELL. Not specifically, no. However, we work very closely with the FCC on studies in this whole field. We work together as a team.

Mr. JONAS. Go ahead with your statement.

Mr. JAMES O'CONNELL. Just let me finish answering your general question.

Once there is large capital investment in one portion of the spectrum it is extremely difficult to move and to reallocate the occupants except on a long-term basis. This takes time; it takes study. This is why we have to continually examine how to do it; this is why it is absolutely essential to undertake the studies that we do—accumulate data that we need—build on it. We're getting answers—concepts of how to do it.

I amphasize again that the problem is by no means simple. It's very complex and the farther one gets into it the better recognition there is of this.

When the President asked his special task force, "Are we making the best use of the electromagnetic frequency spectrum?" this was a very broad charge, involving value analysis and economic choices and engineering methodologies by which we could fit more services into the spectrum as it now exists. We are confident this can be done; that much more use can be made of the existing spectrum without the necessity for major reallocations.

I will pass on to page 8. This committee is well aware of the need for more land mobile services; of the problems of the small businessman in obtaining frequency space; of the actions that the FCC is taking to endeavor to make additional frequencies available to them.

As I say, we feel that our major role in working with the FCC, is to generate concepts of how we can, together, get much more usage out of this natural resource.

I might mention that we have had a joint technical advisory committee of the Electronic Industries Association and the Institute of Electronic and Electrical Engineers working on this problem for the last 4 years to give us industry's views of how this problem can be attacked. And we expect to get the results of their 4-year study in about 2 months.

We need more engineering; we need to develop additional capabilities which do not now exist. We have been operating with a methodology which was adequate many years ago because there was plenty of spectrum. Now we are in the situation of an overcrowded spectrum, and we've got to engineer our way out in terms of available space—and time—and geography—and in terms of how the various parts of the spectrum are being utilized.

One of the illustrative problems which gives a concrete example of the difficulties in frequency allocation is the sharing that was imposed upon satellite communications and our terrestrial microwave system. Both of these have potentials for rapid growth, and they are eventually going to collide in their demands for more spectrum space. Much additional experimentation and research is needed in this field so that we can determine how much each can expand without interfering with the other, and what the basic nature of the interference problems are going to be. We have devoted funds to study these very important questions—which are of great economic significance. We have been trying to get an experimental program going during the past year. We consider it a matter of great urgency, because we're talking here about two very important growth industries—telecommunications by satellite, and our profuse and highly developed terrestrial microwave system which at the present time support all of our TV network transmissions as well as much of our long-distance telephone transmission.

INTERNATIONAL CONSIDERATIONS

Added to our own national problems of the spectrum are important international problems. In 1969, the United States will participate in the renegotiation of the interim arrangements of 1964, under which INTELSAT, the international satellite communication consortium, has grown from an initial membership of 11 nations to its present membership of 61.

Furthermore, the Secretary General of the ITU is asking for an early convening of an international space conference to answer the questions of additional requirements for frequency space for satellite communication and other purposes.

Having studied this matter, we are convinced that to prepare for either or both of these conferences it is essential that our representatives have at their disposal far more technical data than is available to us today. We have proposed experimental programs and we are discussing these with the Defense Department and NASA to endeavor to get necessary resources mobilized from other Government agencies to conduct these experimental programs.

We believe very strongly that through engineering study and experimentation we can develop new areas of the spectrum above those areas now in use.

RADIO FREQUENCY PROBLEMS

Mr. EVINS. If I might interrupt you, here on page 22 you say, for example, 38 separate cities and 350 patrol cars now share one frequency. This is an overcrowded spectrum use. Do they not apply to the Federal Communications Commission for these grants?

Mr. JAMES O'CONNELL. They do.

Mr. EVINS. You have studied the problem, but you have no authority to enforce any regulations upon any bureau?

Mr. JAMES O'CONNELL. That is right, exactly.

Mr. EVINS. Because of this crowded situation, 38 separate cities and 350 patrol cars using one spectrum, what can you do about it?

Mr. JOHNSON. As a specific example, and I know you like specifics, Mr. Chairman, we have been working with Mr. Robert Goe in Mayor Yorty's office in Los Angeles. Much of this they have to do themselves but we have been supporting their activity and they are studying a single management system for the radio spectrum in Los Angeles that will handle all emergency facilities, fire, police, emergency ambulance, and they are right now in the middle of a 120-day design study to put all of these services under single management, and they believe they are going to get much better utilization out of the spectrum in that city.

Mr. EVINS. Do they have to apply to the FCC for authority for consolidating all of their services into one?

Mr. JOHNSON. They will have to in this area, but they have a good, solid engineering base behind their representations to the FCC, and we, of course, to the extent we can, will support them in that.

CITY STUDIES CONCERNING RADIO SPECTRUM

Mr. JONAS. Are you recommending to other cities that they initiate similar studies?

Mr. JAMES O'CONNELL. We are.

Mr. JONAS. Have you got any of them underway?

Mr. JAMES O'CONNELL. New York is making a study.

Mr. JOHNSON. Under task force cognizance, we will have three studies going on, one in New York, one in Chicago, and one in Los Angeles, which is already advanced.

Mr. JAMES O'CONNELL. First of all, they can do considerable amounts for themselves.

Secondly, by attacking the problem in these megalopolis areas, rapidly growing urban areas, we can focus engineering capabilities on measuring interference patterns, determining actual use being made of frequencies. We are convinced that such engineering investigations will ultimately result in a great deal more utilization.

Mr. JONAS. You tell us you are encouraging them to do it and you are meeting with them and consulting with them, and giving them the benefit of your advice and counsel, and they are moving forward and making some progress.

Mr. JAMES O'CONNELL. This is true.

Mr. JONAS. Where besides Los Angeles? Give us some examples.

Mr. JOHNSON. We have the two cases under study now in New York and Chicago, under the direction of the task force with contract assistance.

Mr. JONAS. Can you do this on a regional basis or does it have to be restricted to a metropolitan area?

Mr. JAMES O'CONNELL. We think it could be done on a regional basis. In this sense, there is an analogy with the New York Port Authority in the transportation field.

Mr. JONAS. That whole area in New York City would require maybe some statutory authority and creation of an authority or something.

Mr. JAMES O'CONNELL. They could mutually agree to the establishment of an authority. If legislation is required, it should be sought. This is one view of the way of engineering ourselves out of this problem over the next 5 years.

Mr. JOHNSON. In many of these cases metropolitan areas themselves are finding a lot they can do for themselves.

The city of Los Angeles, for instance, has now for the first time a communications board which reviews and passes upon all of the requirements within that metropolitan area. And it is a major undertaking administratively. But they are making great strides and we are learning as we go and we will recommend these same solutions to other large metropolitan areas.

Mr. LATHEY. I might mention also our work with the States, New York, Massachusetts, Illinois, California, Nebraska, Kentucky, Missouri, South Dakota, Colorado, Ohio, all working on the same problem with our office.

Mr. JONAS. This problem does not lend itself to a State-by-State solution as well as it does to metropolitan areas?

Mr. JAMES O'CONNELL. That is true.

Mr. JONAS. You cannot stop at a State line.

Mr. JAMES O'CONNELL. That is right. That is one of the major problems.

Fundamentally, it's a regional problem, it's a problem of knowing what is the actual usage within a regional area.

Mr. JONAS. How much of this spectrum do we have unused?

Mr. JAMES O'CONNELL. No one can really answer that question.

CHANNEL SPLITTING

Mr. JONAS. Do you know how much you can split up the channels now in existence?

Mr. JAMES O'CONNELL. That is a technical problem. We estimate that we have gone about as far in channel splitting as we are going to be able to go with the present state of the art.

In the next 5 years, assuming further research and development there might be some additional channel splitting. We have already split about 5 to 1 from where we started. There is a joint study which we are conducting with the FCC for a 5-year review of usage reporting, and a regional pilot study as to what uses actually are taking place in various areas.

Mr. PLUMMER. If I might expand on that a little bit, there are four objectives.

With the study being carried on by our subcommittee, we hope within about 2 weeks to have a report of the use of land mobile frequencies in the 10 major metropolitan areas and we are looking for the possibility there of improving the use in the non-Government frequencies as well as Government.

We considered, if necessary, shifting unused Government frequencies over to non-Governmental purposes, particularly for emergency service.

Secondly, we are working to put all Government assignments on a 5-year basis so they would automatically be reviewed at 5-year intervals. We have never had the capability before for the cleanup of deadwood. Last year we deleted something over 12,000 assignments. We hope to increase that number considerably with this mechanism.

Mr. JAMES O'CONNELL. I think we ought to say at this point that the needs of the Federal Government are increasing, as are the needs of the private sector. By increased housecleaning operations, by getting timely information about changing requirements—about frequencies no longer needed—by retiring or reassigning them—we are able to meet the Government's increasing needs without increasing the overall spectrum space allocated for Government use. In other words, we have allocated for Government use—discarded many frequency slots and put in their place more important Government requirements. This is a process of housecleaning, let's say a more businesslike operation within the Federal Government than we have ever been able to do before.

Mr. EVINS. Go ahead and highlight your statement.

You are not asking for any increased personnel?

Mr. JAMES O'CONNELL. That is right.

FEDERAL-STATE COOPERATION IN TELECOMMUNICATIONS

I should say a brief word about our Federal-State telecommunications activity.

The States are beginning to realize that they have a need for economizing and systematizing their State communications systems. To respond to the States' increasing requirements for guidance and assistance by this Office, we have created a Federal-State advisory council consisting of representatives of the States and of the executive departments which give grants to the States in telecommunications.

Mr. EVINS. The Governors of various States nominate certain representatives on this council.

Mr. JAMES O'CONNELL. That is right.

Mr. EVINS. How frequently does this council meet?

Mr. JAMES O'CONNELL. We have met three times so far. And we have another meeting this month. We have found the States to be extremely anxious to get assistance and advice from us.

Here is a letter passing on to me a request from Governor Volpe for the assignment of personnel. Unfortunately, we have only one man working in this area because of our meager staff, and if we assign him to Governor Volpe we cannot be helping the other State Governors.

Mr. EVINS. You have a lot of experts over there, General O'Connell. They can advise the Governors.

Mr. JAMES O'CONNELL. At the present time we are the catalytic agent: we are suggesting how the States can improve their communications system, we are suggesting that they organize a central State authority reporting to the Governor to handle telecommunications. We are pointing out that if they are going to have and make economical use of what they are spending, and what the Federal Government is giving them for telecommunications, they are going to have to get coordinated systems studies. Otherwise, every State department is going to have its own little system—the health service, the ambulance

service, the police, the sheriff's office, the roads. They all have their own. They are not integrated or systematized.

Mr. EVINS. Your capacity is advisory.

Mr. JAMES O'CONNELL. Exactly. And we are very actively promoting this.

Mr. EVINS. You are assisting the States in making more efficient use of their communications system.

Mr. JAMES O'CONNELL. We're responding to the States' apparent needs—giving them advice and assistance when they come to us for it. I should point out that our efforts in response to these requests for assistance is by no means a one-way street. What we're doing in the way of helping the States plan for integrated, less costly statewide telecommunications systems is of very important ultimate benefit to the Federal Government as well. Take for example a situation of a natural disaster where many Federal agencies would immediately become involved in assisting the State—troops from military installations, Small Business Administration, HEW, and many others—and it would be essential to have adequate communications, particularly if rural or relatively remote areas were involved. The best possible response to this kind of situation—or even to a situation in which this Nation was attacked—would be if you had a well-integrated statewide system which could easily be hooked in to the National Communications System, using all means of communication by which to reach outlying areas—people out of touch with the rest of the Nation. Right now, in virtually no instance among the States is this kind of interconnectibility between State and Federal telecommunications resources planned as such. This will be a very important benefit to the Nation, which results from what we're now doing to assist the States in their communications planning.

I have here a little brochure——

Mr. EVINS. Federal-State cooperation advisory committee.

Mr. JAMES O'CONNELL. This tells what its objectives are. You may or may not want to put that in the record.

I also have copies of our 5-year spectrum development program which are available.

PREPARED STATEMENT AND APPENDIX

Mr. EVINS. You list the major accomplishments during 1967 in the frequency management. We will place your statement and appendix to your statement in the record.

(The material follows:)

Mr. Chairman, distinguished members of this committee, I appreciate this opportunity of briefing you on our budgetary needs for the fiscal year beginning next July 1.

I have been encouraged each year by the sympathy and understanding which I have received from this committee—by your counterpart in the Senate—and by this administration. As a result, we have received modest but significant annual increases in our budget. This has enabled us to begin to construct the organization and the competence with which to make inroads on the increasingly complex and important tasks which confront us—to identify the major problems in telecommunications and to start moving toward solutions.

A sense of honesty, however, demands that we measure this progressive increase in capability against the magnitude of the tasks—tasks which we admit are not being adequately done—tasks whose impact upon the social and economic life of the Nation has become so great that the alarm bells have been heard and

a blue-ribbon task force created for the purpose of determining whether our legal, regulatory and organizational structure is indeed equal to the problem of adapting this dynamic technology to our national needs and to the needs of world society.

During the past 4 years we have dedicated ourselves to the task of identfying the problems and trying to do something about them. In a sense, the task force constitutes a "crash effort" to enable us to catch up with the accumulated backlog of unresolved issues.

However greatly we may be dedicated in trying to match inadequate resources with monumental challenges, there is much difficulty in being forced to determine the optimum point at which dedication and responsibility coincide with reality. Responsibility and forthrightness tell me that I should try to obtain an unprecedented augmentation of my assets so that we can do more than react to problems as they arise—so that we can create, shape and influence a telecommunications environment which is far more relevant to the needs of Government and industry and the public than that which we have today.

But responsibility also tells me that our national priorities and *all* of our growing national needs demand a prudent and balanced approach.

And it is in this spirit of prudence and appreciation for economic realities that I come before this committee and ask that you support us at the same resource level as that which we were given for fiscal year 1968.

This amount will permit us to move ahead on a few of the most important problems which we face; it will permit us to make a reasonable dent on other problems which are of growing importance and complexity; and it will perhaps enable us to devote a little time and effort to the longer range questions which continued technological progress will inevitably raise.

I would like now to devote the major portion of this presentation to acquainting this committee with our priority problems and the efforts which we are applying to their correction.

I intend in these next minutes to say something about the President's task force—about the problems of the frequency spectrum—about the national communications system—and about our program for Federal-State telecommunications cooperation. These constitute our current list of priority effort. They are by no means the sum and substance of our concerns; nor can we be content with the need for ranging other problems at a level of lower priority. They also demand our attention and our study.

I would like initially to say a few words about the task force. I do so for two reasons. First, the task force is an unprecedented body. At no time in our modern history has a group been assembled whose charter for investigation is as open-ended as the one under which this task force is operating. In his August 14 message to the Congress on communication policy, the President underscored specific telecommunications problems, all of them complex, critical, interrelated—all of them bearing heavily upon the national interest, upon the social and political growth not only within our own Nation but in all nations of the world—all of them related to national and international law, to regulatory practices, to telecommunication's industry structure, to the Federal Government's organization for telecommunications.

The second reason for my mentioning the task force is because, during the past 4 or 5 months, the resources of our office have increasingly been devoted to assisting the task force in its comprehensive investigations of numerous and varied issues. We look upon the work of the task force as work we should be doing on a continuous basis, were our means adequate for the purpose. Nevertheless, the expertise of our office and the objective results of our many relevant studies in the past were from the outset made available to the task force and have been provided with increasing frequency and hopefully with increasing value.

We expect that this will assist the task force to develop the conclusions and recommendations in respect to important issues which are amenable to ad hoc considerations, so that we can concentrate on the less tractable, longer term priority problems which I have mentioned.

The fact is, however, that between 75 and 100 percent of the time of virtually all of the key members of my staff has been devoted to supporting task force requirements. I have no doubt that this level of effort will continue or will rise before the task force has completed its work; and then the continuity of action and follow-on must be maintained. This support has forced us into an attempt to absorb this workload with minimum impact upon other heavy commitments. Obviously, something has had to give; what we have been forced to do is to con-

centrate our reduced capability upon the most important activities, and go into a "holding action" on those activities which, while eminently important, must give way to top priority issues.

Of these priority issues, none is more important than that of the frequency spectrum problem.

I have, in every appearance before this committee, emphasized the critical nature of this problem and based my request for additional funds primarily on the need for making headway on this issue.

During the current fiscal year, we have devoted the bulk of all of the resources of our office—including 80 percent of the funds available to us for contract studies—in coping with the problems of the frequency spectrum on a day-to-day basis while simultaneously moving ahead on the formulation and execution of longer range plans.

Today I can tell you that we will, during the coming fiscal year, again devote the bulk of our resources, including some 80 percent of our resources, to this one major problem.

I need not tell this committee, as I have told it before, that the problem is not one of money alone—that there is no way in which we can work a miracle to undo what has been developing over the past decade or more.

Nor do I need to remind this committee that the President, in his message to Congress on communication policy, posed several questions for task force consideration. And the first of these was:

"Are we making the best use of the electromagnetic frequency spectrum?"

This is a problem which the task force is studying intensively. We would expect that this group can, if it sees fit, reinforce or augment our analyses and longer term planning on how the job can be done and what it will take to do it.

The fact is that, today, we know much more about what needs to be done, and we can point to very many important activities and accomplishments resulting from the additional resources which we have been given specifically for this purpose. I have noted the most important of these as an enclosure to this statement and I submit it to this committee as a progres report of our efforts during this current fiscal year.

Far more remains to be done—and far more rapidly than our resources will permit.

The pressures for immediate and long-term solution are growing. In the brief period since my last appearance before this committee, the question of the frequency spectrum has become increasingly a "popular" issue. Today, more small businessmen throughout the Nation whose economic livelihood depends upon the use of the spectrum for 2-way communication, are asking Congress for relief from the strictures of a seemingly vanishing natural resource. An increasing number of metropolitan centers are finding themselves unable to "beef up" their communication capability in response to increasing needs for better and faster public services—because of limited frequency spectrum space. The voices of industries whose investments in the spectrum involve literally billions of dollars are increasingly raised on behalf of finding the solutions to a problem which today makes it impossible for them to plan reasonably for future growth. We are basically faced with a situation in which this important national resource is threatened by inadequate engineering and by great unmeasured growth and use.

To find the answer to our polluted frequency spectrum, we've got to do research and encourage others to devote funds to research. We must engineer our way into new frontiers in the higher ranges of the spectrum. We've got to think about rearranging and perhaps reallocating existing parts of the spectrum so as to permit those segments of our economy which are trying to grow to have the room to grow; and to permit those segments of our economy which have already grown to great size to grow even more. We've got to do far more than we've done to analyze this resource in terms of its real value to the Nation and to its users.

The economic segments of our society which use the frequency spectrum already contribute more than $20 billion a year to our gross national product. Given the opportunity for expansion, this figure could easily be doubled in a very few years.

But I repeat: The years of apathy, lack of understanding, inadequate effort, profligate use of what seemed at one time to be an almost inexhaustible resource, cannot be washed out overnight. Even if we were confronted with only the problems which existed 5 years ago, we would still not be able to obtain a rapid solution to the problem.

But the situation today is far more complex than it was 5 years ago, for we are now squeezed in addition by advancing satellite technology. The space services; that is, communication by satellite, could only be initiated by sharing spectrum space between the satellite and our terrestrial microwave radio relay services. As a result, we impose limitations upon both services. These constraints imposed by sharing cannot be accepted too long if we are to provide for the ultimate needs of a technology which promises to double the volume of world-wide communications every 5 years.

And compounding this problem is the mounting pressure both in the United States and Canada to utilize satellites for domestic communication systems. A domestic system would make it necessary to deploy relatively large numbers of earth terminals over our highly developed land mass.

But we are already faced with very serious technical problems of avoiding unacceptable mutual interference between existing and planned microwave radio relay facilities. These engineering problems are considerably expanded when you contemplate superimposing a network of satellite system earth stations on our profuse and expensive microwave complex.

Added to these considerations are important international pressures. In 1969, the United States will participate in the renegotiation of the interim arrangements of 1964 under which Intelsat—the international satellite communication consortium—has grown from an initial membership of 11 nations to its present membership of 61.

Moreover, there is a good possibility that there will sometime in the near-term future be held an international space conference under the sponsorship of the International Telecommunication Union.

To prepare for either or both of these conferences, it is essential that the representatives of the United States have at their disposal far more technical data in respect to the electromagnetic frequency spectrum than is available to us today.

The urgency of this requirement is underscored by a number of interacting and highly significant considerations.

Among these are the great and growing demand for domestic and international communication satellite services; the surprisingly high demand for new frequencies in the millimeter wave portion of the spectrum for both space and terrestrial services; and—above all—the limited amount of spectrum space available for these and other uses.

We will need additional technical data so that we can determine with reasonable accuracy a number of very important decisions for the future; for example, the design, the feasibility, and the economic justification for a domestic satellite communication system; how orbital space will be used both for international and domestic or regional systems; to what extent the United States should continue to develop its current $2 billion investment in terrestrial radio relay systems; what the U.S. position should be during the 1969 renegotiations on domestic and regional satellite communications systems.

The fact is that the data cannot be easily obtained. We have devoted a preponderant share of our limited resources to contract studies and in-house research in an effort to obtain the facts.

One of the urgent needs is an early and extensive propagation and interference measurement program, conducted over a period of at least 1 year in order to include a full weather cycle.

I have personally attempted over many months to encourage a program of this magnitude to be undertaken. I am far from optimistic that it will be undertaken or can be undertaken in time to meet our most urgent needs.

Apart from specific requirements such as this, we have been engaged in a general assessment of what might be done to obtain prompt and far-reaching relief. We have arrived at three basic short term objectives: First, to improve our engineering capability to permit greater sharing of available frequency resources based upon concepts of geography and time; second, to increase coordination and engineering of frequency assignments in certain frequency bands, to be effected at the local or regional level; and, third to require regular reporting of frequency usage so that we will know the actual situation and be in a position to determine what needs to be done.

At the same time, we must contemplate the formulation of measures which will provide additional and longer term relief. We believe that this can be realized by improved engineering of both frequency assignments and communications-electronics systems, including the introduction of improved technology, automated data systems and multichannel "common-user" concepts. We believe that

implementation of these measures will provide a major increase in the effectively available radio frequency spectrum and thereby greatly postpone the time when its use may have to be denied for purposes that can be satisfied by other means.

All of these steps forward are important, but the magnitude of the task and the requirement for speed demands far more in the way of dollars and people than are now available both at the national and local levels.

We shall continue, however, to move as rapidly and surely as we can along our presently charted course:

To collect adequate facts, construct an adequate data base that can be rapidly consulted and coordinated on an electronic data processing basis.

To apply adequate engineering to the problem of eliminating interference, and when interference and conflicts occur, to engineer our way around them so as to accommodate more services in the same spectrum area.

To continue to analyze the comparative values in the use of the spectrum—values to the national and the public interest—so that when some forms of use must be restricted, we can choose those of lowest real value to the Nation and to the public.

To establish standards of use of the spectrum and assure that these standards are universally known; and, then, to obtain the capability for measuring the use and the observance of these standards.

To develop an adequate body of policy and regulation so that people who wish to invest in the spectrum have a reasonable chance of obtaining a return on that investment over a reasonable period of time and within the framework of the national interest.

While we have devoted the bulk of our resources to the problems of the frequency spectrum, we could justifiably apply equal resources to the problems of the national communications system.

In August 1963, following an intensive investigation by a Presidentially-appointed committee which studied apparent deficiencies in our national communications during the Cuban crisis, President Kennedy directed by memorandum that a national communications system be established.

The unified system was to be developed by linking together, improving, and extending on an evolutionary basis the communications facilities and components of the various Federal agencies. The ultimate objective has been to obtain a survivable network which could meet the entire range of Government needs throughout the world and under all conditions ranging from a normal situation to national emergencies and international crises, including a nuclear attack.

In terms of our national security, the NCS clearly reflected an urgent and overriding national need.

It can be described in equally critical terms today.

The Presidential memorandum also specified that the Director of Telecommunications Management would serve as a special assistant to the President for telecommunications and that he would, in respect to the NCS, advise, provide guidance as to the relative priorities of requirements, identify requirements unique to the needs of the Presidency, review actions to insure compliance with policy determinations and guidance, and insure adequate planning to meet future needs of the NCS.

When I assumed my present position in May 1964, there were no funds specifically earmarked for NCS implementation; there was available to me the part-time service of one professional staff member; there was no organizational element of the office charged with the NCS responsibility; there was only meager information concerning the resources available to support the establishment of the NCS; there was no identifiable program for determining the manner in which the major communications systems of the Federal Government valued at some $2½ billion were to be linked together to form the NCS.

It was not until late in 1966 that I was able to assemble an adequate number of highly-competent professionals who could undertake a meaningful program for implementing the responsibilities of this office for the NCS.

Implementation has moved steadily forward. The evolving system is being achieved through linking together some 41 formely independent systems of the Government departments and agencies.

Through the interconnection of networks operating within the NCS, significant increases have already been attained in the survivability and flexibility of NCS components.

Extensive tests and exercises have been conducted and operational standards and objectives have been published by the manager, NCS.

A National Communications System Emergency Actions Group has been formed and staffed with representatives of the major operating components.

This group has the capability for speeding decisions and expediting actions during emergencies.

There has been progressive improvement in the NCS long range plan. Even though this annual plan is not yet a decision forcing document, the initial steps have been taken to introduce coordinated planning, programing and budgeting procedures for the NCS.

Within my office, considerable planning has been done to improve the interface between Federal and State telecommunications systems. (I will refer to this matter later in my presentation.)

The current NCS long range plan includes for the first time a resource inventory which categorizes expenditures for systems procurement, manpower, maintenance and operation, research and development, and leased facilities for major elements of the NCS.

Despite substantial progress, much remains to be done; growing interdependence of Government operations demands increased communication interconnection. In this regard, I have asked the Executive agent to recommend an optimum NCS design concept for the 1970–80 period, and I expect it to come to me for approval this summer. This will help assure that future Federal communications are planned from an overall national viewpoint.

Government telecommunications requirements are changing rapidly. To meet these requirements demands a continuously updated data base so that valid requirements are translated into a forward-looking NCS plan.

The advent of Government-owned communication satellite systems will impact heavily upon the further development of the NCS. A comprehensive, detailed long-range plan which relates the growth of Government-owned satellite systems to their impact upon existing national policy and international regulations and procedures, has yet to be written.

There is a need for a comprehensive body of technical, operational and service standards for Government telecommunications.

There is a need for rendering greater assistance to the executive agent for the NCS in identifying and pursuing near-term goals of making NCS telecommunications services available to all Government agencies.

There is a concurrent need for planning our telecommunication needs sufficiently far in advance as to enable industry to provide timely and effective support of our future requirements, particularly those with crisis overtones.

We need to study far more than we are currently able to do the potential uses to which this rapidly developing telecommunications technology can be put. For example, how can we better integrate current and future technology with the changing methods of conducting international diplomacy?

In brief, the ultimate objective for the NCS is to provide the Government with a reliable, responsive communications backbone, capable of meeting all national requirements and of doing so at minimum cost and maximum effectiveness.

Last year I acquainted this committee with the important initial efforts which we were making in response to the growing need for assistance by the States in their telecommunications planning.

The tempo and scope of this activity has increased so rapidly during the past year that the workload which has been generated by the needs of State and local governments for policy advice and assistance is far outstripping our capability for providing assistance.

It has become increasingly clear that telecommunications constitutes an indispensable factor in the achievement of congressional established goals contained in some 400 legislative acts authorizing Federal assistance to State and local governments. In more than 450 programs being administered under these acts, telecommunications support is vital.

In the brief time since we have undertaken to respond to State and local requests for our assistance, we have held discussions with more than 400 State and local officials and more than 300 officials from our national telecommunications industry. We have learned from these discussions that adequate statewide communications facilities and services, communications management structures, and communications policies, do not exist. Major improvements in our coordinating and planning structure are needed if State and local governments are to develop fully responsive, economical communications systems to meet today's requirements across a broad spectrum of government activities.

None of today's requirements at the national, State and local level is more important than that of telecommunications in support of law enforcement. The

report of the President's Commission on Law Enforcement and Administration of Justice highlights more than 20 specific ways in which telecommunications can improve law enforcement activities at the State and local level. The report underscores specific deficiencies resulting from inadequate telecommunications support:

> "Probably the single greatest technical limitation on the"—law enforcement—"system's ability to make its decision wisely and fairly is that the people in the system often are required to decide issues without enough information.
>
> "Automatic car locator systems costing $100,000 or less per year to operate would decrease the system delay"—(police response)—"at least twice as much as a comparable investment in additional patrol units.
>
> "The most troublesome problem in police radio communication is the critical shortage of radio frequencies available to the police community. In the Chicago metropolitan area, for example, 38 separate cities with 350 patrol cars must share one frequency.
>
> "The scientific and technological revolution that has so radically changed most of American society during the past few decades has had surprisingly little impact upon the criminal justice system . . . more than 200,000 scientists and engineers are helping to solve military problems, but only a handful are helping to control the crimes that injure or frighten millions of Americans each year—most police could have been equipped 30 or 40 years ago as well as they are today."

Our own direct and frequent contact with law enforcement authorities at the State and local levels confirm these findings. We have recently been working with representatives of the city of Los Angeles who are actively seeking means for improving telecommunications support of their law enforcement activities. The Los Angeles authorities have summarized their present situation as follows:[1]

"The LAPD is handicapped in the discharge of its responsibility by a system which is inadequate for optimum information gathering, processing, and exchange; command and control functions.

"This handicap results in an inability to perform optimally such functions as protecting lives and property; enforcing laws and city ordinances; preventing acts of lawbreaking; performing traffic control tasks; apprehending criminals; gathering intelligence about potential criminal acts; and providing any other services assigned to it by proper authorities.

"Inadequacies of the present system include but are not limited to the following general areas:

"Insufficient capability to follow and control events in the field.

"Insufficient knowledge of location, capability, and availability of field units.

"Insufficient communications handling and monitoring capability."

"Insufficient information processing, exchange, retrieval, and display capability.

"Limited operating utilization of costly equipment (i.e., used for major emergencies only).

"Additional training required for effective use of costly equipment because of specialized nature of operation."

During the past year, with the support first of Governor Bryant and then Governor Daniel, we have taken steps to organize a Federal-State Telecommunications Advisory Committee to provide a forum to which mutual Federal-State telecommunication matters may be referred for advice and assistance. Included on the Committee, apart from myself as Chairman, is the Defense Commissioner of the FCC who serves as vice chairman; Assistant Secretaries from the Departments of Commerce, Defense, HEW, HUD, Justice, State and Transportation; senior representatives from the Federal Advisory Commission on Intergovernmental Relations, Bureau of the Budget, GSA and OEP; State representatives from the Council of State Governments and the Governors' Conference.

A publication describing the composition of this Committee, its functions and its objectives was prepared for Governor Daniel's review and was recently disseminated to all State Governors for their information (I have copies here for each member of this committee).

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[1] From "Request for Proposal for an Electronic, Communication, Command, and Control System for the Los Angeles Police Department", transmitted to the Office of Telecommunications Management by Letter dated Jan. 23, 1968, from Thomas Reddin, Chief of Police, and E. M. Davis, Deputy Chief, Planning and Control, City of Los Angeles Police Department.

Many critical nationwide planning tasks and issues remain to be tackled in the context of our Federal-State telecommunications coordination activity. Typical examples of critical questions which relate to telecommunications support are:

How can we use this technology more effectively to reduce the accident toll on our highways, improve the utility and capacity of our interstate highway system, respond more quickly with medical aid which could save lives when highway accidents occur?

How can the Public Broadcasting Act of 1967 and related legislation dealing with education be adequately supported by telecommunications technology to bring about the President's objective for a network for knowledge?

It is possible for Federal, State and local governments to begin to share telecommunications facilities and services so as to achieve economies of cost and use of the frequency spectrum? At present, there are administrative, legislative and regulatory impediments to achieving these objectives.

We have undertaken to promote the drafting of legislation which would permit the States to utilize the facilities of the Federal Telecommunications System. This is but one area in which Federal-State cooperation and coordination may bear useful results. There are many others.

How shall Federal, State, and local governments establish the procedures for intrastate, interstate and Federal-State coordination which can lead to the development and operation of efficient, economical telecommunications systems and interconnections?

The achievements of the past year testify to the degree of cooperative spirit between the Federal Government and State and local governments. I am optimistic that, if we are able to devote adequate resources to this activity, we can continue to make substantial progress toward finding the answers to the questions which I have raised.

Gentlemen, at the outset of my statement, I underlined the fact that the major and growing challenges to management of our telecommunications resource are vastly larger than the resources which I can apply to them.

I have tried to reconcile this disproportion between challenge and response by recognizing that we can do only so much with what we have in the way of planning and action in the light of mounting needs in virtually every major facet of our national life.

But we can and we do highlight—and give visibility—to our requirements, and seek to interest other Government departments toward action.

I have—despite clear recognition of increased need—asked that our budgetary authorization remain at the same level as last year's so that we may continue to make progress in our most important areas of activity.

I have reviewed three of these top-priority efforts: The problems of the frequency spectrum; the requirements for an integrated National Communications System; and the growing need for assisting State and local governments in applying telecommunications technology in support of their expanding requirements.

I do not wish to leave the impression that these activities are unique in their importance to the Nation. There are other massive and serious problems, but I merely want to identify a couple of them without going into extensive detail.

We are responsible for, and very heavily involved in, addressing a variety of critical issues which have arisen because of our progress in communication satellite technology. The pressures and the interactions which have developed continue to grow in strength and complexity. Our stated commitments in the Communications Satellite Act of 1962, and those arising out of our being a signatory to the Interim and Special international agreements of 1964—make it mandatory that we deal with questions such as the proposals for domestic satellite services, technological assistance to developing nations, the future of INTELSAT, and many other related matters which must be resolved before we enter into the 1969 renegotiations.

The rapid growth of satellite technology in the last few years is but one example of the continuing revolutionary advances in telecommunications. In fact, telecommunication technology is moving so fast that we find it increasingly difficult to adapt what we now have to the needs of our society much less try to develop a policy base which will enable prompt and wise use of the technology that's coming along. We are devoting as much of our effort as we can to try to anticipate the problems which will inevitably develop as a result of this onrushing technology and innovation of use—to try to act rather than react—

to try to plan for integrating these new developments smoothly, economically, and with least disruption to our social and economic life and to existing telecommunications facilities and services.

Scientific research into these matters is costly—but not nearly as costly as waiting for the problems to hit us.

We will continue to do everything that we can to grapple with these many problems—so that we can lay the groundwork for implementing the recommendations which the President's task force will make—so that we can maintain the impetus which we have been able to develop toward the formulation of improved national telecommunications policies.

Mr. Chairman—members of this committee—I appreciate your courtesy and am prepared to respond to your questions.

MAJOR ACCOMPISHMENTS DURING 1967 IN THE FREQUENCY MANAGEMENT AREA

1. Early in 1967, a Spectrum Development Division was added to the OTM staff for the express purpose of planning for and bringing about better use of the radio frequency spectrum. This group has already produced a 5-year spectrum development program, and the program is being pursued. Copies of this program are available for the committee and for introduction into these proceedings.

2. In response to a query from my office, the Joint Technical Advisory Committee (JTAC) (sponsored by the Institute of Electrical & Electronics Engineers and Electronic Industries Association) initiated a study in 1964 on the need for technological programs and the formulation of objectives for dealing with the subject of electromagnetic compatibility (interference) as a national problem. The JTAC effort, involving the services of over 200 people with an accrued total of approximately 40 engineering man-years, has just completed its work and has submitted a verbal report to the DTM. A final report is to be issued in the latter part of April 1968 wherein recommendations will be set forth for a major program for coping with the many facets of electromagnetic compatibility and frequency management, with emphasis on the need for major increases in engineering capabilities.

3. OTM staff members involved in the frequency management activity screened and processed over 32,000 frequency assignment actions involving the use of the radiofrequency spectrum by Government agencies in the fulfilment of their missions. The accomplishment of this workload, without increase in personnel, was facilitated greatly by extensive improvements in the application of automatic data processing to the frequency management area. Increased examination of frequency resources has brought about extensive reuse of the spectrum as evidenced by the fact that over 13,000 deletions, expirations, and withdrawals of frequency authorizations were processed during the past year. Such improved management is imperative if the increased requirement, brought about by our ever-increasing reliance upon communication-electronics devices, are to be fulfilled. Improved management also permits new needs, many involving national security matters, safety of life and preservation of other natural resources, to be treated expeditiously.

4. Coordination was effected with Government agencies and a concise statement of national objectives for use of the radiofrequency spectrum was developed.

5. The OTM approved and instituted for the first time a recommendation by the Intergovernment Radio Advisory Committee (IRAC) which requires the periodic review of Government frequency assignments at least every 5 years.

6. OTM staff representatives participated in a World Administrative Radio Conference of the International Telecommunication Union, attended by 70 countries, wherein the ITU radio regulations as regards the maritime mobile service were revised. One significant result was the allocation of radiofrequencies for oceanography, thereby enhancing the ability of U.S. scientists to insure that national objectives are met in this important area.

7. Intensive effort was made toward filling information voids pertaining to radiowave propagation in connection with communication satellites, particularly above 10 GHz. An interference measurements program, setting forth the specific experimentation required is under active consideration by an Interagency Policy Group (DOD, NASA, and FCC) chaired by the OTM.

8. A most significant report entitled "Impact of Projected Space Services Upon the Utilization of the Radiofrequency Spectrum" was received recently. This effort, conducted under OTM contract, was for the purpose of determining radiofrequency spectrum requirements for the allocation to space services during the

period 1966 to 1980. The study contains basic information essential to the formulation of the U.S. position for use in future national and international spectrum planning.

9. Under OTM sponsorship, contracts were let in the following areas with the objective of providing vital inputs to the national radiofrequency management effort:

a. Basic factors bearing on future use of the radio spectrum.
b. Study of electromagnetic side effects.
c. Improved usage of the frequency spectrum.
d. Alternatives in frequency management (pricing the spectrum).

An additional effort entitled "Standards and Measurements for Improved Spectrum Utilization" is currently out for bid.

10. Through the Subcommittee on Spectrum Planning of the Interdepartment Radio Advisory Committee, which reports to the OTM on matters pertaining to the radiofrequency spectrum, several problems of national significance have been treated. One area receiving attention has been the critical need for additional frequency resources in the case of non-Government land mobile services. A report, prepared in coordination with the representatives of the Federal Communications Commission, as to the findings on this problem is due in the immediate future. The subcommittee has also spent considerable effort on the difficult problems inherent in determining the frequency allocation needs associated with foreseen applications of telecommunication technology in the space area. A report on the spectrum space available for satellite communication services above 10 GHz was submitted recently to the OTM.

11. The OTM developed and submitted to the Interdepartment Radio Advisory Committee a proposed "unified spectrum usage reporting program." The purpose of this program is to incorporate into the Government frequency management data base as soon as practicable the capability whereby an indication may be obtained as to the extent to which radiofrequency resources authorized for use by agencies of the executive branch are actually employed. This is a particularly important objective in the case of mobile radio services. The availability of such a tool is a fundamental objective of the OTM since frequency usage data constitute a prime cornerstone in coping with the problem of frequency management at the national level. This objective of far-reaching and unprecedented magnitude in the radiofrequency area will be pursued with vigor during the coming year.

12. A policy has been developed to insure that Government agencies do not obligate themselves financially for the acquisition/development of expensive earth or terrestrial station sites until it has been ascertained that coordination has been completed with all parties affected and that adequate frequency support is available. This measure is necessary in view of the increasing proliferation of communication/electronics installations and is particularly appropriate with respect to the large investments necessary for major radar sites and earth station (communication-satellite) facilities.

13. The Manual of Regulations and Procedures for Radiofrequency Management, the first codification of regulations, procedures, and policy guidance for the acquisition and use of radiofrequencies by Government agencies, was revised, improved, and expanded.

14. Increased emphasis was placed at the national level on the need for improved engineering standards. In this regard, action was taken to give greater consideration to the proceedings of the International Radio Consultative Committee (CCIR) of the ITU. As an associated action, the work program of the Technical Subcommittee of the Interdepartment Radio Advisory Committee was expanded and accelerated. In the engineering area, particular attention is being given to improved use of the radiofrequency spectrum through such measures as the reduction of spurious emissions and harmonics of transmitters and the spurious responses of receivers.

Mr. EVINS. We note here that you are asking for $1,986,000, which is an increase over last year of $41,000 with the same number of jobs.

Mr. JAMES O'CONNELL. Yes.

Mr. EVINS. The reason for this increase I suppose is because of the pay act increase that the Congress passed.

Mr. JAMES O'CONNELL. Partly, but mostly a difference in lapse rates between fiscal year 1968 and fiscal year 1969.

UNFILLED POSITIONS

Mr. EVINS. How many unfilled jobs do you have in your organization at the present time?

Mr. JAMES O'CONNELL. We have four out of 70. Three are in the process of being filled, which leaves one that is not in the immediate process of being filled.

Mr. EVINS. Were you able to absorb any of your pay increase in 1968?

Mr. JAMES O'CONNELL. We did.

Mr. EVINS. Full amount?

Mr. JAMES O'CONNELL. Yes.

Mr. EVINS. You are going to be able to absorb some in the next year?

Mr. JAMES O'CONNELL. Yes.

Mr. EVINS. But you need $41,000 more.

Mr. JAMES O'CONNELL. That is correct.

SUMMARY OF RESPONSIBILITIES

Mr. EVINS. We will place in the record page 1, which is a summary of your program.

(The page follows:)

TELECOMMUNICATIONS MANAGEMENT, SALARIES AND EXPENSES

PROGRAM AND PERFORMANCE

The Office of Telecommunications is responsible for advising and assisting the President on all communications matters.

1. Telecommunications

This activity includes: (1) providing policy direction for the development and operation of the national communications system; (2) develop advanced concepts and plans for the application of new technology within the Government; (3) developing overall policies for the mobilization of the Nation's telecommunications in a national emergency; (4) assigning frequencies to Federal Government radio stations and developing procedures and rules for their use; (5) reviewing the actual usage of Government frequencies; (6) developing data on Federal Government frequency requirements; (7) providing assistance and advice to the Department of State on international telecommunications matters; (8) assisting the President with respect to his coordinating and other functions under the Communications Satellite Act of 1962; and (9) promoting efficiency and economy in the procurement and management of communication services throughout the Federal Government.

2. Contractual studies and research

This activity will finance technical studies of telecommunications matters which are too broad in scope to be undertaken by any single department and for which staff and facilities are not available.

Mr. EVINS. Telecommunications provides for policy direction for the development and operation of the national communications system.

Secondly, you develop advanced concepts for the application of new technology within the Government.

You develop overall policies for mobilization of the Nation's telecommunications in a national emergency. You assign frequencies. Does not the FCC assign the frequencies?

Mr. JAMES O'CONNELL. Not within the executive branch of the Government.

Mr. EVINS. This is where you have a hand in saying what frequencies should be assigned to the Federal Government?

Mr. JAMES O'CONNELL. Here I have the total responsibility for doing it. This is not advisory. This is authority.

Mr. EVINS. You review the actual usage of Government frequencies. GSA says they have a nonmilitary system and the military owns a communications system. One agency can pick up and call another.

Mr. JAMES O'CONNELL. Actually, the GSA system is part of the national communications system; this is not part of the problems in the frequency field. I am talking about the operational phase.

Mr. EVINS. You assist the President with respect to his coordinating and other functions under the Communications Satellites Act. We will talk a little more about that later, but tell us in a word what you do in the communications satellite field.

SATELLITE COMMUNICATIONS

Mr. JAMES O'CONNELL. We keep current on the progress that the Communications Satellite Corp. is making, the difficulties that they are having, the negotiations being conducted with their foreign partners, with the Commission and the State Department.

Mr. EVINS. Do these negotiations involve whether the land or facilities shall be owned by the corporation or shall be owned and maintained by the country in which they are located?

Mr. JAMES O'CONNELL. They are all owned by the country in which they are located. One of the problems here in the United States has been the question of ownership of eath stations in the United States, whether they should be wholly owned by COMSAT or partly owned by other carriers. And the FCC decided sometime ago on an interim basis to share ownership.

Mr. EVINS. Suppose you have a country that is a little recalcitrant and does not go along with your plans. How could you make them cooperate?

Mr. JAMES O'CONNELL. Persuasion and intellectual conviction, I would say. We do not try to exercise the weight of our position in the satellite business.

APPROPRIATION AND PERSONNEL HISTORY

Mr. EVINS. We will place page 2 in the record.

(The page follows:)

APPROPRIATION AND PERSONNEL HISTORY—OBLIGATIONS

Period (fiscal year)	Positions	Compensation and benefits	Other objects	Studies and research contracts	Total appropriation
1966	70	$638,000	$342,000	$300,000	$1,280,000
1967	70	800,000	375,000	425,000	1,600,000
1968	70	957,000	388,000	600,000	1,945,000
1969	70	1,007,000	179,000	800,000	1,986,000

SUMMARY OF ACTIVITIES

Mr. EVINS. We will look at this other summary. Your state that this budget is designed to encompass a period of transition and major change in the telecommunications policies of this Nation. These communications policies have guided the United States throughout the past 30 years. The role of the Office of Telecommunications has been that of a catalyst, as the Director said.

You point out the major intentions and problems. Then you list some of these problems on page 4 and page 5.

General, a friend of mine who reviewed this to give me an independent appraisal made this comment at the bottom of page 5. You say:

There is growing appreciation of the interaction between telecommunications and the social, economic and political objectives of the Nation. If used effectively, telecommunications can materially aid in solving of the problems of transportation, urban development, labor, education, the elimination of poverty, and almost every other major problem facing the Nation.

His comment was that is a rather modest claim.

Mr. JONAS. Did you say he was independent. He ought to be on this board.

Mr. EVINS. I asked him for an independent appraisal of the budget. This says you can solve all of our problems with telecommunications—elimination of poverty and almost every other thing.

Mr. JAMES O'CONNELL. Not some of them. But telecommunications support is essential to the solution of most of them.

Mr. EVINS. If you can do that, General, your money is well justified.

Mr. JAMES O'CONNELL. We do not say we can solve them all. Better communications can assist in solving most of these problems, the crime on our streets, the slaughter on our highways.

Mr. EVINS. If used effectively is the way you put it?

Mr. JAMES O'CONNELL. Yes. We have not begun yet to develop the potentials that lie in better communications for the solution of our national problems. This is the statement we are making.

JUSTIFICATION SUMMARY

Mr. EVINS. You say:

The goal is national telecommunications policy and growth that can support our national goals, our international objectives, our laws, our regulatory activities and the entire fabric of our national life.

That is a great goal. That covers it all.

You set that out on page 6.

We will place this all in the record.

(The material follows:)

I. SUMMARY OF THE TELECOMMUNICATIONS MANAGEMENT TASK

INTRODUCTION

This budget is designed to encompass a period of transition and major change in the telecommunications policies of this Nation. It is presented in an environment of anticipation and great interest throughout the Nation. An environment in which the President is providing leadership in the conduct of a total reappraisal of the communications policies that have guided the United States throughout the past 30 years.

The creation of the President's Task Force on Communications Policy "sets in motion the necessary studies for a better understanding of policy needs in domestic and international communications." [1] This budget seeks to provide the basis for the continuation of these studies—for the implementation of the policy recommendations presented by the task force—and for maintaining the impetus toward achieving improved telecommunications policies.

This administration, and this Office, have provided much of the leadership and factual analysis so essential to bring about a national focus on telecommunications policy matters. The major policy studies supported by the administration and the Congress in past programs of the Office of Telecommunications Management have been a major factor in:

Focusing attention upon the technological forces that are creating economic and social pressures.

Identifying significant policy needs in the field of telecommunications.

Creating awareness among Federal, State, and local government officials of the role the telecommunications can play in meeting the needs of modern government.

In prior years, the role of the Office of Telecommunications Management has been that of catalyst. It has been the task of the Office to point out the major potentials and problems that advancing telecommunications technology brings to the Nation—to focus national attention on these potentials and problems—and to set in motion the forces within Government and industry which could cope with the problems and take specific steps toward realization of the potentials.

The appointment of the President's Task Force on Communications Policy will provide a new national focus on telecommunications policy and increase the need for the development of factual data and implementation of coordination action. The development of factual-objective studies to aid in coordination of policy interactions between Government agencies, U.S. industry, and international interests has been a major function of the Office throughout the past several years. In many cases the issues dealt with are so fundamental in terms of financial impact or are sufficiently basic in other ways as to generate a crisis atmosphere that requires extremely careful policy action. Following are some representative policy crises that have been dealt with recently by the Office:

Uncertainty as to the role of the Government as an "authorized user" of satellite communications and the attendant issues of Government dollar savings versus continued viability of the international common carriers.

Dissatisfaction on the part of our Intelsat partners and disagreements concerning the extent to which the FCC should be involved in the international competitive bidding procedures employed by Comsat in their role as Intelsat manager for the global system.

Conflict concerning the proper division of services between communications satellites and undersea cables in the Caribbean.

Disagreement concerning the technical and radio interference issues between Government interests and the Communications Satellite Corporation in the implementation of the Hawaii communications satellite earth terminal.

Conflicting interests between the Government, Comsat and the domestic common carriers in an 18-month controversy involved in the final selection of the east coast (West Virginia) communications satellite earth terminal.

Conduct of factual studies and resolution of multiple conflicting interests involved in the executive position concerning the introduction of domestic satellite communication services.

Differences of views and objectives within Government and industry and conflicts of interests concerning the U. S. position to be taken relative to the 1969 negotiations and international discussions concerning "definitive arrangements" for the Intelsat global satellite organization.

Action to identify and clarify the issues involved in the conflict between Comsat and the common carriers in the case of TAT-5/Intelsat IV controversy.

One of our main roles must be that of providing adequate support to the task force and direction and management capabilities to carry out the policies recommended to and approved by the President. This is the mission addressed within this budget. We must seek to meet urgent decision action on crisis problems which cannot be deferred and at the same time provide the long-term management and direction that will permit us to achieve the potentials inherent in the telecommunications technology which makes up today's environment.

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[1] President Lyndon B. Johnson, message to the Congress on Communications Policy, Aug. 14, 1967.

TODAY'S TELECOMMUNICATIONS POLICY ENVIRONMENT

There is growing appreciation of the interaction between telecommunications and the social, economic, and political objectives of the Nation. If used effectively, telecommunications can materially aid in solving the problems of transportation, urban development, labor, education, the elimination of poverty, and almost every other major problem facing the Nation.

In designating the members of the task force on communications policy the President took full note of the fact that telecommunications can be a pacing item to other important national objectives. The participation includes experts in the field of economics, international affairs, labor, space technology, information systems and media, science and technology, national security, law, transportation, commerce, health, education, and welfare, as well as the Director of Telecommunications Management, and the Chairman of the FCC. The goal is national telecommunications policy and growth that can support our national goals, our international objectives, our laws, our regulatory activities and the entire fabric of our national life.

The President described the environment well in his message on communications policy:

"The future of this new technology stirs our imagination.

In business and commerce—

Commercial telephone calls will be carried routinely by satellite to every part of the globe.

Rapid and universal exchange of data through satellite-linked computers will encourage international commerce.

Productive machinery can be operated at great distances and business records can be transmitted instantaneously.

In education and health—

Schools in all lands can be connected by television—so that the children of each nation can see and hear their contemporaries throughout the world.

The world community of scholars can be brought together across great distances for face-to-face discussions via satellite.

Global consultations, with voice and pictures, can bring great specialists to the bedsides of patients in every continent.

The art, culture, history, literature and medical science of all nations can be transmitted by satellite to every nation.

Who can measure the impact of this live, direct contact between nations and their people? Who can assess the value of our new-found ability to witness the history-making events of this age? This much we know: because communications satellites exist, we are already much closer to each other than we have ever been before.

But this new technology—exciting as it is—does not mean that all our surface communications facilities have become obsolete. Indeed, one of the challenges before us is to integrate satellites into a balanced communications system which will meet the needs of a dynamic and expanding world society. The United States must review its past activities in this field and formulate a national communications policy."

This budget presents specific programs which can respond to the challenge described by the President and concentrates in areas where identification by the task force on communication policy seem probable. The challenge is not easily met, the path from promise to practice will involve much vision, hard work, and cooperation:

We will need hard scientific knowledge and comprehensive trade-off analysis if we are to successfully balance the technological breakthroughs in space communications with those equally important innovations in microwave, cable, millimeter wave guides, and laser pipes.

THE TELECOMMUNICATIONS PROGRAM

Telecommunications needs creative Federal leadership—both in terms of national policy and modern legislation. The progress of telecommunications technology has been dramatic, but the task of introducing new telecommunications advances is not one of simply grafting a few improvements onto the existing system. Major policy studies are needed across a wide range of topics.

The task to be achieved is to bring up to date the established guidelines for a telecommunications industry that has been growing in various directions over the years.

In a period of over 100 years, there has been only five major legislative actions directly aimed at telecommunications policies. This is not to say that a large number of amendments have not been initiated; but there have been only five fundamental acts:

The Post Roads Act of 1866.
The Radio Act of 1912.
The Radio Act of 1927.
The Communications Act of 1934.
The Communications Satellite Act of 1962.

If telecommunications is to keep pace with the modern world, we need to provide a climate that will foster a more creative role for the Government in terms of national telecommunications policy and development of potentials for growth.

Some of the issues which can be expected to require attention in the future are:

Authorization for merger of the international common carriers.
Updating of section 606 of the Communications Act of 1934.
A basis for national policy on the communications and the copyright aspects of CATV.
Enlarged consideration of the issue of "Privacy in Telecommunications."
Interaction of Communications and Computers.
Improvement in the structure for the Federal Operation of Communications Systems and Facilities.
Consideration in depth of the national issues involved in the use of communications satellite systems to serve domestic needs.
Negotiation and consent to ratification of the International Agreement for Global Communications Satellites—Intelsat definitive arrangements.
Measures to advance the achievement of modern low-cost telecommunications systems by the developing nations.
Adequate management of the radio spectrum.

Radio frequency spectrum program

Of the many issues that we face, none is of greater urgency than that of dealing effectively and rapidly with the worsening crisis of the radio frequency spectrum.

Congress is well aware of the problem; it is aware that the long failure to plan effectively for the explosive growth in use of the spectrum has had a serious impact upon small businessmen throughout the Nation—has curtailed the expansion of essential public services which make use of the spectrum—and has seriously affected the economic growth of industries whose use of the spectrum has contributed over $20 billion per year to the GNP. That problem is now further aggravated by the introduction of communication satellite technology.

It is clear that time is running out on our ability to cope meaningfully with this problem. There is no way in which a miracle can be achieved, for it is only within the past 2 or 3 years that there has been significant recognition given to the nature of the problem and its impact upon our national life.

A comprehensive spectrum development program is presented in this budget. Stripped to its essentials, the program involves:

Collection of adequate facts, construction of an adequate data base that can be rapidly consulted and coordinated on an electronic data processing basis.
Adequate engineering which can plan the elimination of interferences, and when interferences and conflicts occur, to engineer our way around them so as to accommodate more services in the same spectrum area.
Value analysis to determine values to the Nation, values to industry, values to our public services, relative values to the public interest and to the national interest, of the use of the spectrum.
Standards of use, establishment of building code standards for the use of the spectrum so that everyone knows what the standards are.
Measurement of the use and observance of standards.
An adequate body of policy and regulation so that people who wish to put money into development of the spectrum have a reasonable chance of getting a return from that investment.

The national communications program

The requirements for this Office to act as a catalytic agent to resolve differing views and to stimulate more rapid progress toward established objectives is nowhere more apparent than in respect to the activities of the national communications directorate.

The need for an integrated, survivable, fully responsive national system has been repeatedly underlined by apparent deficiencies and by opportunities for further Government cooperation and greater economy. Typical issues and problem areas confronting the national communications directorate are evident in the following:

There is the question of how to cope with the requirements for communications systems capabilities in support of computer requirements. The issues generated by the growth of computer systems and the impact on telecommunications facilities will create problems of technical and operational standardization and require close examination of policy and needs for regulation.

There is the continuing requirement for some means of coping with the impact of technological progress on telecommunications.

There are questions of the soundness and adequacy of existing U.S. national telecommunications policy. Much of today's telecommunications policy extends from the Communications Act of 1934. This act was conceived and instituted in an era totally different in terms of the sophistication, kinds and quantities of telecommunications in use as compared with the extreme sophistication of today's communications which pervade and control every aspect of our social, governmental, and industrial lives. It is now appropriate to evaluate the Communications Act of 1934 and such other legislation and policies impacting on telecommunications.

There are issues evident in the area of State government communications requirements. Each of the 50 States is developing communications capabilities to meet its own particular State governmental requirements. Federally funded State telecommunications programs must be examined closely to determine whether some of the existing Federal communications facilities in a given State can also meet the State's requirements or that the State's facilities might be able to meet some Federal requirements.

There is the question of whether the U.S. Government is making its telecommunications needs known far enough in advance so that the U.S. industry can work toward the Government market of the future.

There are issues connected with consistency in implementation of cost effectiveness methods concerning telecommunications facilities.

There is the question of how to best cope with the impact of obsolescence.

There are a number of questions concerning the national telecommunications system (NCS). The national communications systems (NCS) is a major area of concern to the Director, Telecommunications Management.

There are problems in the management procedures evident in the need for "unanimous consent" of all agencies involved; the full power and control of the NCS executive agent cannot be directed to accomplishing major improvements under such conditions.

The Director, Telecommunications Management, as special assistant to the President, must guide and support the NCS executive agent in identifying and pursuing near term goals toward making telecommunications service available to all Government agencies. Through the continuous evolution of the NCS toward a single, common user Federal communications system, the Federal Government can expect to increase its telecommunications capability with a minimum expenditure of resources.

There are many issues connected with Government-owned communications satellite systems. This new telecommunications trunking medium has not yet been fully appreciated and applied in all areas of possibility. There are impacts of this new medium, because of its international nature, on existing national policy and international standards. A comprehensive, detailed long-range plan on the growth of the Government-owned communications satellite systems has yet to be written.

There is a drastic need for comprehensive, yet simplified, technical, operational, and service standards for Government communications.

International and satellite communications program

The need for a strong and efficient international telecommunications structure to support our worldwide commercial interests and our diplomatic activities has increased sharply during the post-World War II years. Many U.S. indus-

tries formerly involved in international trade in very minor ways have now developed manufacturing and sales organizations in a large and growing number of foreign countries. These major activities urgently require maximum support from the U.S. international common carriers.

In this situation of increasing world demand and growing importance of international telecommunications, the structure of U.S. international communications should be at its best. It is not—it contains serious flaws. Studies made by OTM, FCC and by other elements of the executive branch of Government have identified many inadequacies.

More and more, the international carriers are being forced to place their radio circuits on standby status and depend upon A.T.&T. or COMSAT for their international channels. This places the carriers very much in the situation of being middlemen and makes it more difficult for them to provide the management innovations and leadership needed.

Satellite communications technology is also impacting heavily upon international communications. A number of issues relating to domestic use of satellites has recently arisen; and these domestic issues interact in a very crucial way upon international telecommunications policies.

The following are typical issues in the international and satellite communications field;

Will our Nation's interests in the space age be served well and adequately by preserving the present pattern among international communications services?

What measures should be taken to assure the most efficient and economical use of frequencies and facilities employed in domestic and international communications—whether by satellites or other means?

What principles of international agreement should govern participation by the United States and foreign nations in the ownership and use of a global satellite communications system?

What agreements should be sought to guarantee freedom of the content of satellite radio and television broadcast transmissions, particularly in view of the differing cultures, ideologies, and conflicting philosophies of operation now prevalent?

What means should be used for assisting less developed countries to establish ground facilities linking them with communications satellites, particularly where extension of the service will not be economical from a commercial standpoint?

What are the special Government interests in the communications satellite field?

What kind of domestic satellite systems should we develop—

Multipurpose?

Dedicated?

Who should own and operate the—

Satellites?

Ground stations?

How should gains and losses from any of the new technologies arriving out of Government research and development be shared?

Should technological competition be encouraged or should competitors be protected?

How should terrestrial systems and satellite systems share the market both domestically and internationally?

How shall satellite and terrestrial systems be developed to make best use of the freqency spectrum?

How, and to what extent, should domestic satellite systems be interconnected with international facilities?

Research and technology

The fundamental objective is to create the policy framework and management capability that can take full advantage of new technology. To achieve this objective requires careful analysis of the entire process of telecommunications research and especially of the interactions between Government policy and research incentive within industry. We must determine:

What factors influence technological R. & D. and innovation.
Are the factors named below important elements?
Basic research: advances in the state of the art.
Demand from users:
Defense.
Civilian.
Research on potential uses: creating demand.
Industry structure.
Government policies and programs:
Economic regulations.
Industry assistance.
Financing.
Prohibitions.
Taxation.
Promotion.
How successful have past Government policies been in influencing future technology of telecommunications?
Should basic research be done by the telecommunications industry alone?
How does demand from users impact upon research goals?
Do we have an effective program for research on potential uses which can create new demand?
Does industry structure retard or accelerate technological change?
How do economic regulation policies influence future technology?

FIVE FUNDAMENTAL ACTS

Mr. EVINS. You state that the task is to bring up to date the established guidelines of the telecommunications industry. You have stated there have only been five major acts passed, the Radio Acts of 1912 and 1927, Post Roads Act of 1866, Communications Act of 1934, and the Communications Satellite Act of 1962.

Are you making any specific recommendations for legislation?

Mr. JAMES O'CONNELL. Not as yet. But the task force, we think, with our cooperation, will do this.

Mr. EVINS. General, your office was created by Executive order of the President?

Mr. JAMES O'CONNELL. Right, sir.

Mr. EVINS. And you are a study group and advisory group. You say that you have some old statutes that need updating, but you have not made any specific recommendations. Do you not think it is about time you tell the Congress what you need in the way of legislation?

Mr. JAMES O'CONNELL. The answer is "Yes," I think we should.

RADIO FREQUENCY SPECTRUM PROGRAM

Mr. EVINS. Your justification states that the use of the spectrum has contributed over $20 billion per year to the gross national product. I suspect that is an accurate statement. I do not know how you get it, but I suspect it is true.

Mr. JAMES O'CONNELL. Four years ago we had a panel, Mr. Chairman, which met over a period of about a year to endeavor to determine what this was, what the use of the spectrum contributed. At that time it was the estimate, based upon the figures we could collect, of 17

billion. We believe that it has increased at least 3 billion since that time, probably more. We think this is an overly conservative figure, but we do not really have today's statistics.

Mr. EVINS. The amount of radios and television sets manufactured provides a lot of employment, and FCC testified on the immense amount of money spent for commercial advertising over these media.

Mr. JAMES O'CONNELL. This is right. Seventy million television sets in the United States, 210 million radio receivers.

Mr. EVINS. Are any fees charged by your agency for the advisory service which you give?

Mr. JAMES O'CONNELL. They are not, sir.

Mr. EVINS. Are there any areas in which fee services could be scheduled?

Mr. JAMES O'CONNELL. We have not given that matter study.

Mr. EVINS. We are asking some of the regulatory agencies, in view of the increased appropriations, if they cannot revise their schedule of fees. If all would join in one proposal for an act to allow them to use their fees in lieu of their own appropriation, their appropriations could be reduced.

They presently turn these fees in to the general fund of the Treasury. Consider the question of fees.

Mr. JAMES O'CONNELL. We will consider it.

NATIONAL COMMUNICATIONS PROGRAM

Mr. EVINS. Much of today's communication policy extends from the Communications Act of 1934. This act was conceived in an area totally different from the terms of specification we have today.

Federally funded State telecommunications programs must be examined. Are you proposing to subsidize State telecommunications programs?

Mr. JAMES O'CONNELL. Not to any great extent than they are now being subsidized by Federal grants.

Mr. EVINS. On page 12 you state that there is the question of how to best cope with the impact of obsolescence. There are a number of questions concerning the National Telecommunications System.

Are we getting the answers through your office? You say there are a lot of questions and problems.

Mr. JAMES O'CONNELL. We are working on it. Perhaps I should submit to you the appendix to our budget here which shows objectives and important accomplishments in the frequency spectrum field in all of these fields, short-term and long-term objectives, and how we are proposing to operate.

Mr. EVINS. Leave this with the committee for the study of our staff.

A comprehensive, detailed long-range plan on the growth of Government-owned communications systems has yet to be written. We do not know yet how many Government-owned systems there are?

Mr. JAMES O'CONNELL. I agree with you we should know and we are working with the Bureau of the Budget now to establish a system whereby we will have the information that we should have on what it is costing us in our various Government departments, specifically for telecommunications.

INTERNATIONAL PROGRAM

Mr. EVINS. You speak of the need for strong support for a worldwide communications structure. Many U.S. industries formerly involved in international trade in very minor ways have now developed manufacturing organizations in a large and growing number of foreign countries.

Do you do anything about helping our balance-of-payments situation?

Mr. JAMES O'CONNELL. Not specifically.

Mr. EVINS. We are all concerned about it.

Mr. JAMES O'CONNELL. I certainly agree.

THE TAT–5 CABLE

Mr. EVINS. More and more the international carriers are being forced to place their radio circuits in standby status and depend upon A.T. & T. and COMSAT for their channels. We noticed a press release recently that the FCC has announced the approval of a new additional transatlantic cable.

Did the telecommunications management recommend this?

Mr. JAMES O'CONNELL. No. It has not been approved as yet. All that has been done is that the Commission has told the carriers the conditions which would need to be met in their filing for authority for a landing license to land this cable in the United States. This is the next step—a filing by the carriers with the FCC.

Mr. EVINS. This would be a private concern which would be authorized to build another transatlantic cable?

Mr. JAMES O'CONNELL. Exactly.

Mr. EVINS. Are the existing ones opposing it?

Mr. JAMES O'CONNELL. No. The existing ones are not. COMSAT did object. They did so because they felt they would be able to supply the demand at ultimately lower cost since the proposed satellite system is going to have even greater capacity than the cable. This became a very complicated issue and the upshot of it was that, subject to certain conditions, the FCC told the carriers that a filing would be entertained if it met with the conditions which they imposed.

Mr. JONAS. Did not Comsat show a profit last year and is now in the black?

Mr. JAMES O'CONNELL. The last quarter, I believe.

Mr. JONAS. You mean they do not want to give up some of their business?

Mr. JAMES O'CONNELL. However, I think we should recognize that of the $200 million of Comsat's stock issue, about $60 million is invested in communications facilities and $155 million—I will check these figures—is invested in securities. So they are deriving much of their income from their investment in securities. So we do not yet have here a communication corporation that is living basically and primarily on doing communications business. Its growth is very much needed.

Mr. EVINS. You are good at assessing the problems. What are the problems between international communications, let us say, for the cable system as against the COMSAT system?

Mr. JAMES O'CONNELL. We organized an intragovernment committee, Department of Justice, State, Defense, my Office, the FCC, Labor, which came up with a recommendation that the 1934 act be amended to remove the prohibition on merger which now exists. This would allow our present international carriers to merge and produce one strong, one or more strong U.S. international carriers rather than the five we have now. A draft act was prepared to be submitted to Congress which has now been referred to the Presidental task force for review. So this is one of the issues the task force is undertaking to review, the possible need for a merger to produce one or a fewer number of international carriers to strengthen our international business, to provide a better competitive capability with the single foreign entities.

Mr. EVINS. How do you establish a more competitive situation if they are going to merge and monopolize it?

Mr. JAMES O'CONNELL. It is a question of who you are competing with.

If we are competing amongst ourselves, that is one thing. If we are competing with the world and other nations, you want to streamline your operation and cut your costs, reduce your overhead so that you can compete to the best advantage.

And furthermore, you want to build up your economy of scale to the maximum extent possible.

Lehman Bros. made a study of this at the request of the carriers in 1950–51, in which they found that substantial economies could be effected and rate reductions achieved if a merger were to be authorized. So this is one of the questions up before the task force at the present time.

Mr. EVINS. You have two pages of questions on this area.

Do you have any answers yet?

Mr. JAMES O'CONNELL. Again, all of these questions are before the task force now; we make our contribution to them, but no conclusions have been drawn as yet.

TECHNOLOGICAL IMPROVEMENTS

Mr. WYMAN. What would be some of the illustrations of the market to which you have reference other than television or radio communications as such? What kind of a market that is so different from what we have now other than for technological improvements in communications?

Mr. JAMES O'CONNELL. We are really talking about all types of communication, leased service, data transmission, computers talking to computers across the oceans from country to country. We are talking about telephone conversations, of course, which we have now to a limited extent to those nations that are connected up either with a satellite or with cable communications or high frequency radio which is quite inferior. We are talking about the development of world television on a really major scale so that we will be able to pull into the television community all of those nations that wish to receive programs.

Mr WYMAN. This is something that is bounced off a satellite?

Mr. JAMES. O'CONNELL. That is right.

In other words, there is no real electrical differentiation between any of these modes of communication any more. A signal traveling from an earth station to a satellite, being amplified and coming back to another earth station does not know whether it is a part of speech conversations, part of a television picture, part of a data bit, or what exactly it is being used for. They are all the same kind of waves.

Mr. WYMAN. And in this kind of development, on the scale to which you make reference, there would be no such thing as integrity. You could not code them and put them on a spectrum or frequency that would not be interceptible?

Mr. James O'CONNELL. Yes, sir; they can be coded.

Mr. WYMAN. Coded in the sense that a combination of letters might not mean what they appeared to, but they could still intercept transmission?

Mr. James O'CONNELL. All of the transmissions can be intercepted, but they can be encrypted, what is called group encryption, in which all that appears to the listener is a noise signal, and without highly specialized equipment it is not broken into speech or a television picture or facsimile picture or what have you.

Mr. WYMAN. If the transmision was made of a picture, this could be picked up anywhere there was a receiver in any country that was built to receive that type of thing?

Mr. James O'CONNELL. This is right, provided they wanted to pick it up and distribute it.

Mr. PLUMMER. Pay television is going to use a scrambler.

Mr. James O'CONNELL. Yes. There have been developed television scramblers in which you have to set your set to a certain combination.

Mr. MARSH. Will the gentleman yield?

Mr. WYMAN. Yes.

OVERRIDING TRANSMISSIONS

Mr. MARSH. Is it technically feasible to override transmissions by a satellite in the electronic communications field, whereby such transmission could usurp another program?

Mr. JAMES O'CONNELL. Jamming, you mean?

Mr. MARSH. Either jam or beam in on the television program, let's say from a vessel at sea or country that did not recognize international agreements or allocation of spectrum, where they would transmit a message that would be receivable on American television sets.

Mr. JAMES O'CONNELL. It is possible to do this. It costs a lot of money to do it because you have to have a powerful earth station to do it with. You can identify rather rapidly who is doing it.

Generally speaking, the history of international communication that this sort of thing has not been done. The nations respect their membership in the ITU (International Communications Union), which does set up interference codes, regulations, for observance by all nations, which says one shall not interfere with another. And by and large in the international field we have had, to my knowledge, no intentional jamming or usurpation of the other fellow's frequency.

The answer is, it is always technically possible to do this sort of thing. But within Intelsat, for example, with a grouping of 61 nations comprising roughly 95 percent of the world's communication traffic, we consider it unlikely that anyone who is not a member of the consortium would deliberately offend 61 nations.

Mr. EVINS. They can pick up all of these programs and information and then they have to have a sort of a centrifuge to dissect what they want to transmit?

Mr. JAMES O'CONNELL. At the present time.

In the early stage of the satellite business you had one satellite and two earth stations and that was your combination. You could talk from one earth station to another earth station through one satellite. But in the next phase coming along, what they call Intelsat 4, it will be possible for 20 stations to talk to one another through the same satellite. So we have the potential here for a much greater diversity and volume of transmission and reception.

Mr. EVINS. You have an informal consortium, as you say among 60 nations for agreement and cooperation. You might put your best legal minds to drawing up a code of conduct in international communications, if you have not already done that.

Mr. JAMES O'CONNELL. They have that.

QUALITY OF PICTURE FROM SATELLITES

Mr. WYMAN. In the state of the art that prevails today, you say 20 stations in Intelsat, and so forth. Do you get the sort of picture and signal of sufficient integrity right out of one of the satellites as you do from the ground station? Does it look as though it is going to be as good?

For instance, cable television in my area gives better pictures on TV than most ordinary pictures. Are we going to have pictures comparable to that by way of satellite?

Mr. JAMES O'CONNELL. We think there is no question about it.

Mr. WYMAN. Of the 70 million TV sets you referred to a minute ago, now in the United States, there is nothing like this in Africa and yet the main thrust of the international aspect of this will be for us probably to communicate with other nations and peoples in the world in the interest of world peace and expansion of education, and so on.

Mr. JAMES O'CONNELL. Exactly.

Mr. WYMAN. Therefore, I take from what you are saying you think there is a tremendous future for the television business in some of these backward countries.

Mr. JAMES O'CONNELL. I do, indeed.

Mr. CLARK. Let me just clarify a point. We are not talking about direct broadcasting, this is all relay. This is just a means of taking a signal from the specialized station in a country to one in another country from which it is then distributed through the television network.

Mr. JAMES O'CONNELL. We are not talking about direct broadcasting from the satellite to the home receiver.

Mr. WYMAN. That is why I asked you in the very beginning if there was some new technology coming along. This is something to be expected in the future?

Mr. GREEN. We can address ourselves to this.

Yes, indeed, there is new technology which is being very closely followed by our office, which offers several possibilities. One would be direct broadcasts to individual receivers. This seems quite a way off at the present time. A good deal closer, the technology will support at the present time a broadcast to a small receiving station which does distribute into a CATV system, or wire system or a small rebroadcast system on a very limited geographical basis.

So all of these possibilities for extensions of what we currently have, which Mr. Clark has pointed out, right now does not encompass direct broadcasting, but these are in developmental stages of the future state of the art.

Mr. WYMAN. This is something you can talk about. Do you refer to classified information?

Mr. GREEN. No.

Mr. WYMAN. Something you know enough about?

Mr. GREEN. Yes.

Mr. JAMES O'CONNELL. In fact, we had a research program for the last several years to investigate the potentials of direct broadcasting; how much power will be required in the satellites, what kind of technology is going to be required to do this, what would be the cost of conversion of receivers on the ground, and all of this sort of thing.

That program did not find favor with Congress last year; but we think that—without trying to solve the economic and political problems which we would have—that from the standpoint of advancing the state of the art and providing a facility which could be used in countries such as India, that it is a very worthwhile program of R. & D., not highly expensive, and it should be encouraged because it will bring to fruition a new capability for worldwide education.

Mr. WYMAN. This is part of the task force's function to assess?

Mr. JAMES O'CONNELL. Right.

Mr. CLARK. In the first place, there is no international agreement on frequencies for direct broadcasting. As a matter of fact, in 1963, at the Extraordinary Administrative Radio Conference, two nations introduced a clause into the Conference prohibiting the direct broadcasting from satellites because they were fearful of a repetition of Voice of America and BBC broadcasts in the high-frequency broadcast band. The clause was not included so there is now no international frequency assignment for direct broadcasting by satellites.

Mr. EVINS. The Voice of America is supposed to broadcast behind the Iron Curtain and throughout the world. Are we misinformed on this?

Mr. CLARK. No. They are doing a very good job, but in different frequency bands.

Mr. GREEN. The chairman might be interested in the situation in the Soviet Union. They have a very highly developed television distribution system, not unlike the one I just mentioned, where satellites transmit to small distribution systems. As vast as their land territory is, and because they have not previously had the extensive development of television broadcasting, they have chosen to leapfrog parts of the state of the art and they are now accomplishing distribution of tele-

vision programs across the Soviet Union by means of their satellite system.

Mr. WYMAN. You cannot transmit a television signal in the same manner you can transmit a radio wave over mountains and down valleys?

Mr. JAMES O'CONNELL. It depends on the frequency you use. These frequencies are line-of-sight frequencies, and do not go over mountains, et cetera.

Mr. WYMAN. TV, but not in radio?

Mr. JAMES O'CONNELL. In high-frequency radio we can get long-range signals.

Mr. WYMAN. But they are not line of sight; are they?

Mr. JAMES O'CONNELL. They are not line of sight. They bounce off the ionized layer. But they are unreliable because they are influenced, for example, by the sunspots. They are subject to static, interference, and atmospheric noise. So the quality of reception on those frequencies is poor.

Furthermore, the bandwidth required for TV cannot be obtained at high frequencies. TV requires at the present time a 6-megacycle band, which would take up a substantial part of the whole high-frequency spectrum for just one transmission.

Mr. WYMAN. When the chairman referred to the Voice of America reaching over into these countries, this can be received by an ordinary radio set?

Mr. JAMES O'CONNELL. Yes; that is right. He is talking about high frequency.

Mr. CLARK. Music programs.

Mr. WYMAN. You cannot broadcast TV like this?

Mr. JAMES O'CONNELL. No; just voice and music.

PERSONNEL STAFFING

Mr. EVINS. General, the chart on page 19 shows that, in 1964, you had 38 authorized jobs, 28 staff and 10 professional. Then, you go to 40, 53, 59, and 69, for a total onboard of 69. For 1969 you are asking for 70 positions.

Mr. JAMES O'CONNELL. That is right.

The next page shows the appropriation request and appropriations granted. The total appropriation has gone up from $771,000 to $1,945,000. You have had a rather precipitous growth.

INCREASE IN STUDIES AND RESEARCH

Mr. MARSH. I notice on this chart, last year your total appropriation was $1,945,000 and this year you are requesting $1,986,000, which is an increase of $41,000, but your studies and research is up from $600,000 to $800,000. So you reflect there a $200,000 increase, yet only $41,000 increase in your total appropriation request.

Where are you picking up the other $159,000?

Mr. RAY O'CONNELL. Up until this year we bought computer time from other agencies, Bureau of Standards primarily. But with OEP's NRAC computer, which you heard about this morning, we are now at the point where we can utilize OEP's computer for our purposes.

Mr. JAMES O'CONNELL. This is a deliberate program to effect sub-

stantial savings in our computer charges. In fact, we let a contract to develop the program for converting our activity, which was based upon previous computer utilization, to one which would utilize the NRAC. We are going to save considerable amounts of computer fees in that way.

Mr. MARSH. So what you did, you went ahead and increased your R. & D. rather than passing the savings along in the appropriations?

Mr. JAMES O'CONNELL. No. There is no relationship between the savings which we effected through our program for better and cheaper computer usage—an the funds which we need for research studies. If we had not gotten substantial savings in computer fees, we would then be forced to ask this committee for the additional funds needed for what I feel are mandatory requirements for studies. The savings in computer fees are a bonus—a means for increasing our work in very important research areas without a proportionate increase in our overall budget requirement. The only relation between the money requested for studies and the savings which we've gotten from our program for better and cheaper computer use is that a part of the contract money—about 25 percent of it—is needed to continue our program for adapting our frequency-management system to the greatest potential given us by the NRAC computer.

When this conversion effort is completed, we're going to be able to obtain data in a far more timely and productive way than we've ever been able to before—and this is the name of the game; if we're to make headway on solving the frequency problems, we simply have to get more data to work with. We can't do much without it; and without these studies which we have undertaken and upon which we build our knowledge base—we're spinning our wheels. The studies that we've done and the studies that need to be done are absolutely prerequisite to our moving ahead.

Without these studies we're operating in a knowledge vacuum—this is the kind of vacuum which is responsible for the problems we've got now. Right now we need to know how the spectrum is being used—the numbers of equipments using it, where they're located. We need more engineering data so we can anticipate with some confidence what the requirements are going to be and what interferences may occur when we introduce new electronic devices into our environment. We need to establish the economic and social values of the use of the spectrum so we can make an intelligent evaluation of who should get parts of the spectrum when you've got competing claims for them.

We just don't have a large enough staff to develop this kind of data. We need help—and our studies are the only means of getting it.

Mr. JOHNSON. Some part of this is related to new programing to use that computer also.

Mr. RICE. You mean an increase in the R. & D.?

Mr. J. RAY O'CONNELL. Yes, sir.

COORDINATION OF COMMUNICATIONS ACTIVITIES

Mr. EVINS. You point out that the communications activity of the U.S. Government is big business. It cost the taxpayers between $2 billion and $3 billion per year, this justification says. There are some 17 major departments and agencies that operate separately organized

communications systems, and 30 separate systems operating under the central management of the National Communications System. Does the National Communication System include GSA?

Mr. J. D. O'CONNELL. Yes, sir. It includes GSA.

Mr. EVINS. GSA is one of the 30?

Mr. J. D. O'CONNELL. Yes.

Mr. EVINS. You say there are 33 other fixed systems operating outside the national system?

Mr. J. D. O'CONNELL. These systems were all surveyed by the executive agent, who is the Secretary of Defense. They picked up, as part of the National Communication System, all of those systems that they concluded would contribute to an integrated National Communications System. They didn't pick them all up. But this pickup program is still going on.

Mr. EVINS. Who made this survey, the Department of Defense?

Mr. J. D. O'CONNELL. The Department of Defense, assisted by other agencies of Government.

Mr. EVINS. You point out on the next page that traffic in this area is increasing at the rate of 70 percent each year. Are you speaking about data communications?

Mr. JOHNSON. Yes, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. Data communications is increasing 70 percent per year. You point out your accomplishments on pages 23 through 31. It is more of an assessment of the problems than accomplishments. Insert pages 23 through 33.

(The pages follow:)

IV

ACCOMPLISHMENTS

Establishment of the President's Task Force on Communication Policy focused national attention upon the serious policy problems in the telecommunications field. This Presidential action achieved the objective of bringing national awareness to telecommunications policy problems and provided the basic Government machinery to deal with such problems.

Important accomplishments of the Office of Telecommunications Management during the past year were:

OFFICE ORGANIZATIONAL STRUCTURE

A radio spectrum development and long range planning staff has been organized and initial staff assigned.

With personnel actions now in the process the office has reached the ceiling of 70 positions authorized in the fiscal year 1966-68 budgets. In addition, the Department of Defense and GSA have provided experienced communications management personnel on permanent detail to the Office of Telecommunications Management.

COMMUNICATION SATELLITE POLICY

Coordinated and issued policy guidance concerning U.S. assistance in the development of foreign satellite capabilities.

Essentially completed, in cooperation with the State Department, a statement of policy to serve as a guide for the 1969 renegotiation of the INTELSAT Interim Agreement.

Coordinated a thorough and comprehensive review of U.S. policies and developed criteria which will speed the flow of U.S. information and know-how to other friendly countries involved in communication satellite activities.

Coordinated the establishment of a Government steering committee to provide instructions to ComSat relative to international communication satellite matters. The committee is chaired by the Department of State with the DTM and FCC Chairman as members. Instructions have been provided in the area of international procurement policy, international rate structures, and satellite design objectives.

Continued analysis of the programs for establishment of communication satellite earth stations in developing nations; published a staff report on this subject, and provided the results to the Eximbank, the IADB and other development banking agencies who can help accelerate the financing of satellite programs.

Administered a program encouraging the construction of earth station links to the global communications satellite system being established (INTELSAT) in order to permit developing nations to benefit by direct access to communications satellites.

Participated in continuing studies concerning possibilities for using the global communications satellite system (INTELSAT) to advance international information exchange and educational purposes.

Carried out extensive in-house and contract studies to develop policies relative to domestic satellite communications and the support of educational television interconnection agreements. A national report on these studies was presented to the Senate Communications Subcommittee in the hearings conducted during the past year. Reports have also been presented to the FCC.

Worked with the Department of State and other Government agencies in providing support for Ambassador Linowitz and the President in the recent OAS Summit Conference.

Coordinated with the FCC, DOD, ComSat and other agencies relative to rate reductions and other policy determinations involved in the Pacific Satellite "30 Circuits" case.

Aided in the planning and development of the national program for the establishment and operation of the worldwide commercial communications satellite system. Continuous review has been maintained of all phases of the development and operation of the system, including the activities of the Communications Satellite Corporation and actions before the Federal Communications Commission.

Prepared, for issuance by the President, annual reports to the Congress on activities and accomplishments under the Communications Satellite Act of 1962.

Served as the focal point for, and provided liaison between, the executive branch of Government and the Communications Satellite Corporation.

Established an ad hoc policy group on the satellite interference measurement

RESEARCH AND TECHNOLOGY

In cooperation with the Electronic Industries Association and other leading industry associations, established a panel of experts who will study and develop ways of improving industry-Government cooperation in the area of creative telecommunications planning. Specific objectives of these discussions are to—

Develop new concepts and establish an active, creative role for the Federal Government in telecommunications;

Develop new national systems approaches which will help guide future development of telecommunications services;

Develop new means for achieving timely applications of new technology; and,

Develop better ways of insuring that telecommunications adequately support national objectives.

Initiated discussions with George Washington University concerning the establishment of a communications systems planning institute which would provide postgraduate studies in the engineering and economic aspects of communications systems, with special emphasis on international communications and communications for developing nations. The institute will provide specific support to ComSat and INTELSAT.

NATIONAL COMMUNICATIONS IN GENERAL

Initiated action with the FCC in its inquiry into the regulatory and policy problems presented by the interdependence of computer and communications services and facilities (docket No. 16979). Requested the executive agent, National Communications System (NCS), to provide responses to the FCC questions. The

General Services Administration, in coordination with this office, in securing responses from other non-NCS Federal departments and agencies.

Conducted a comprehensive analysis of NCS reports, Federal Communications Commission reports, and industry reports on "The Effect on Communications of the Northeast United States Power Blackout on 9 and 10 November 1965."

Reviewed a DOD draft bill to authorize the disposal of Government-owned long-lines communications facilities in the State of Alaska, and for other purposes and presented the results for consideration to the Bureau of the Budget.

Initiated action, in coordination with BOB, to review current policies relating to the field of automatic data processing as they affect telecommunications.

NATIONAL COMMUNICATIONS SYSTEM

Approved a recommendation by the executive agent, NCS, to eliminate the Alaska Railroad telecommunications point-to-point facilities as NCS assets.

Implemented a day-to-day method of procedure and a program for more effective determination and delineation of the telecommunications requirements of the presidency as directed in the President's Memorandum of August 21, 1963.

Developed and coordinated with appropriate governmental and industry representatives instructions for the application of BOB Circular A–76 on Government procurement policy in the telecommunications area.

FEDERAL-STATE TELECOMMUNICATIONS SUPPORT

Established a Federal-State telecommunications advisory committee. This committee is composed of representatives from 14 Federal departments and agencies, representatives of nine State Governors, a representative from the Council of State Governments, and a representative of the Governors' Conference; it serves as a focal point in the Nation for consideration of telecommunication activities of interest to Federal, State, and local governments.

Initiated action which is resulting in a major study of communications in support of the Nation's health activities. This is being accomplished by the Department of Health, Education, and Welfare in cooperation with the Director of Telecommunications Management.

Completed a major study and developed procedures concerning the procurement of Government-owned versus Government-leased telecommunications.

Initiated action to respond to Senator Pastore's charge that the Director of Telecommunications Management in cooperation with the Department of Health, Education, and Welfare recommend a policy applicable to a nationwide system of educational television interconnection.

Created an awareness in the States of the need of adequate telecommunications structures, total State systems planning on near-term and long-range bases, and for interstate, intrastate and Federal-State coordination in the development of adequate telecommunications.

Provided advice to and liaison with State and local government officials as they have requested such advice. Contact has been made with officials in all of the States.

Conducted, and provided on a request basis, two major studies concerning the trends in Federal, State, and local government telecommunications.

Assisted one State in the development of legislation to provide for adequate telecommunications maangement at State level. The resulting enacted bill has been made available to several other States seeking to accomplish the same objective.

Initiated six major studies concerning problems facing the States in their development of adequate telecommunications. These studies have been launched through the mechanism of the Federal-State Telecommunications Advisory Committee, with various departments serving as primary action offices in each instance.

Conducted a major study in an effort to determine telecommunication objectives, and policies, as they are reflected in the Federal Assistance Legislative Acts. These acts have resulted in more than 450 programs, each of which imposes telecommunications requirements upon Federal, State, and local governments.

Provided minimal secretariat support for the overall Federal-State Telecommunications Advisory Committee, and have developed Director of Telecommunications Management positions on policies and other matters being considered by the committee.

TELECOMMUNICATIONS MOBILIZATION

Conducted approximately five classified studies of adverse telecommunications activities which occurred during the past year.

In coordination with the Director of the Office of Emergency Planning, approved nine State plans and coordinated 11 final draft plans concerning overall State emergency telecommunications policies and procedures.

Worked with the Federal Communications Commission and the Department of the Interior on industry emergency electrical power, gas and petroleum telecommunications plans.

Conducted a study on telecommunications claimancy responsibility during mobilization conditions.

Published, in cooperation with all Federal departments and agencies, "Procedures for the Use and Restoraton of Private Line Telecommunications Services During an Emergency."

Devised an organizational structure for exercise of the President's authority over telecommunications as it is contained in sections 606 (a), (c) and (d) of the Communications Act of 1934, as amended.

Developed, issued, and maintained current a complete inventory of international circuitry—radio, cable, and satellite, for use by the Federal Government and industry during mobilization conditions.

Coordinated closely with the Office of Civil Defense in their efforts to assist the States in the development of adequate civil defense communication systems, facilities, and services.

Participated in U.S. civil defense council meetings, State civil defense council meetings, interagency emergency planning committee meetings, and other meetings concerning civil defense telecommunications.

Developed and provided to the Federal Communications Commission an initial revised policy on telecommunications precedences for use throughout the Nation.

Provided assistance and advice to the U.S. representative to the NATO Civil Emergency Planning Committee in support of his attendance at committee meetings. This has been accomplished in coordination with the Office of the Director, OEP, the Department of Defense and the Department of State.

Provided advice and assistance to industry officials through attendance at the Federal Communications Commission-sponsored National Industry Advisory Committee.

Provided, on a continuing basis, a member of the National Communications System Emergency Action Group. This group provides guidance to the NCS manager during emergency conditions.

Developed, in coordination with industry and government agencies, a system of procedures whereby residence telephone services of key personnel will be assured during emergency conditions.

FREQUENCY MANAGEMENT AND SPECTRUM UTILIZATION

Sent to the President and to Congress a comprehensive report on national frequency management within the executive branch of Government.

Successfully applied automatic data processing and computer techniques to our management of the radio spectrum. We are now able to provide complete radio-frequency assignment data to all Government agencies on a monthly basis, whereas previously it had been done quarterly. We are moving ahead to further automate this important activity.

Continued to strengthen our Frequency Management Advisory Council. The Council now includes the Executive Director Electronic Industries Association (the latest member) and seven outstanding experts representing a cross section of talent from outside the Government who are in a position to provide objective judgment on frequency management problems and concepts.

Maintained and improved the Manual of Regulations and Procedures for Radio Frequency Management which provides a codification of the regulations and procedures, including policy guidance, for the acquisition and use of radio-frequencies by Government agencies.

Developed new computer techniques to provide remote access to our frequency data bank and extend on an evolutionary basis into new areas which will improve the Government's frequency management system.

Completed a study (in which the FCC and other Government departments and agencies are collaborating) to determine the potential growth and possible needs for frequencies in the space services between now and 1980 as well as the means of satisfying approved needs in the light of spectrum saturation.

Improved and extended our program for inspection of Government radio stations.

Established a new subcommittee on long-range planning within the interdepartment radio advisory committee (IRAC).

In collaboration with the FCC maintained current data in the national table of frequency allocations.

Established and initially staffed a group for radiofrequency spectrum development. A charter has been drafted which provides for fully coordinated planning between the OTM long-range planning group and a similar group which has been established by the Federal Communications Commission.

Completed a preliminary staff analysis of laser technology and its potential impact on telecommunications management policies over the next few years.

Developed, in collaboration with the FCC and the Department of State, the U.S. position for the frequency management aspects of the administrative conference on martime mobile communications.

Continually updated the Government table of transmitter frequency tolerances and that of tolerance for the levels of spurious emissions to reflect the state of the art.

Developed and promulgated improved procedures for the submission of Notices of frequency assignments to the International Frequency Registration Board of the ITU, as well as for the processing of letters and questionnaires from the board concerning such assignments.

Continued the comprehensive program that has been started for reviewing assignments contained in the Government frequency assignment list.

Continued the survey of Goverment radio frequency usage. When completed it is expected to provide an indication of the extent of use being made of each frequency assigned to the agency concerned. An inventory of such usage has been completed, and procedures are under development for periodic submission by the Government agencies of reports of their frequency usage, for their processing by ADP techniques and their inclusion in the central magnetic tape file.

Given increased attention to measures to control the pollution of the electromagnetic spectrum. Steps thus far taken include (*a*) the establishment of procedures for the control of Government-restricted radiation devices and industrial, scientific and medical equipments; (*b*) efforts to remove the serious hazard to safety of life and property from garage door openers interfering with the navigation and control of aircraft; and (*c*) the establishment of a policy looking to the more effective control of transmitter spurious emissions.

Established improved procedures for the selection, coordination and authorization of frequency assignments for foreign embassy radio stations at the U.S. seat of Government.

Made extensive successful efforts to locate a site for the east coast satellite earth terminal which would provide adequate protection to the national radio quiet zone.

MAJOR ACCOMPLISHMENTS

Mr. EVINS. You point out many areas of research, many areas of study, and many problems. Tell us in a few words: What are some of your major accomplishments?

Mr. J. D. O'CONNELL. Well, many of them are in the frequency management field where we have for the first time initiated and gotten underway some long-range planning, where we are conserving to an extent not previously achieved the frequencies which are in use by the executive branch of the Government. Do you want to pick up at this point?

Mr. JOHNSON. We have those listed in the appendix.

Mr. EVINS. Federal-State cooperation?

Mr. J. D. O'CONNELL. They are listed in my statement and in the Federal-State brochure.

In our Federal-State activity we are giving advice to the States on the development of their State communications systems, the integration of the State systems with those of the Federal Government, advising them as to how they can save money on their communications.

We have assisted GSA in submitting legislaion to the Congress to permit the States to use the Telefax system which the Federal Government is using, at substantial savings to the States, savings as such as 75 percent of what they have been paying.

Mr. PLUMMER. Here are some earlier accomplishments in the report of 1966, if you want to use that.

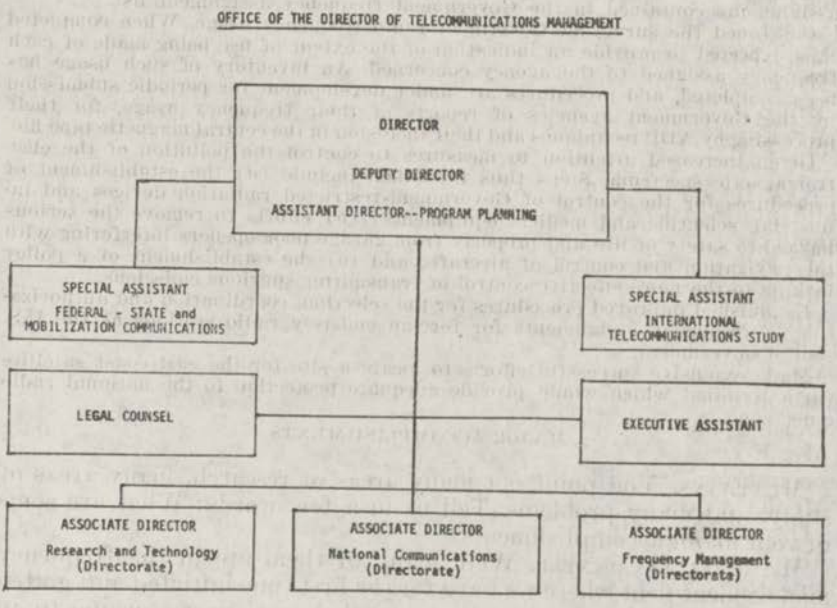
Mr. J. D. O'CONNELL. We also have on pages 16 and 17 of our previous report the measures we have taken in frequency management to increase the emphasis given by other departments of Government to frequency management within their departments, to increase their capabilities and improve their management.

We have instituted a system of inspection of the installations of other departments of Government in which we actually go around and check up on them.

ORGANIZATION

Mr. EVINS. Now we turn over to your organization and we will place the chart on page 38 into the record.

(The page follows:)



TELECOMMUNICATIONS MOBILIZATION

Mr. EVINS. Next is telecommunications mobilization and Federal-State activities, a summary. You list several of those matters for Federal-State cooperation. My question is: How urgent are these?

Mr. J. D. O'CONNELL. We think they are urgent.

Mr. LATHEY. We believe they are very urgent, sir. Almost all of them are a result of requests from Governors and State legislatures for advice and assistance. We try to respond to those just as quickly as we can.

Mr. J. D. O'CONNELL. How many Governors and their staffs have you personally talked to?

Mr. LATHEY. Thirty-seven.

I might give you one example, Mr. Chairman. In Massachusetts I gave a briefing to Governor Volpe and his staff. He wanted to know why he couldn't reduce the costs in his State annual gudget for communications. Within 2 weeks, simply by a paper transfer—no funds involved—he began a saving of $45,000 a year.

Mr. EVINS. That is good, to advise the Governors. These advisory and counseling services, I am sure, are all helpful; they promote efficiency, economy, and better management. On page 41 you say you are going to set up a separate agency to exercise control over national telecommunications resources. This agency would be, in effect, an expansion of the Office of the Director of Telecommunications Management.

Mr. LATHEY. When the President's authority under section 606 of the Communications Act of 1934 comes into effect the President will take over many of the responsibilities now vested in various departments and agencies, in order to direct the war efforts of the United States.

Mr. EVINS. What act is that?

Mr. LATHEY. The Communications Act of 1934.

Mr. J. D. O'CONNELL. Section 606.

Mr. EVINS. What does it say, again?

Mr. LATHEY. It grants to the President authority to assign priorities for the use of communications. It also enables him to control the radio and wire communications of the United States in order to defend the United States.

Mr. EVINS. This is in a case of extreme emergency.

Mr. LATHEY. Yes, sir.

Mr. J. D. O'CONNELL. This is nuclear attack or emergency short of nuclear attack.

Mr. LATHEY. This authority has been delegated to Mr. O'Connell on a contingency basis. There is no office in the land now capable of exercising that authority.

Mr. J. D. O'CONNELL. This would only be invoked in the event of a proclamation by the President.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. EVINS. The general testifies that this authority under the Communications Act would only be exercised by the President in case of dire emergency.

Mr. LATHEY. That authority in 606 does not include censorship.

Mr. EVINS. Fine. That is reassuring.

Place these pages 39 through 47 into the record.

(The pages follow:)

VII

TELECOMMUNICATIONS MOBILIZATION AND FEDERAL-STATE ACTIVITIES SUMMARY

The Director of Telecommunications Management is charged with major responsibilities in the areas of national telecommunications mobilization and Federal-State telecommunications coordination. To carry out these responsibilities specific objectives have been established. These are as follows:

1. National telecommunications mobilization:

Develop a realistic Federal Government capability for effectively mobilizing the Nation's telecommunications during limited war and civil defense conditions of any severity.

Improve the existing Federal Government telecommunications capability to deal with national crises and emergency conditions, particularly natural disasters, civil disturbances, limited and general war.

Establish procedures and a program to exercise and test the ability of the Nation's telecommunications to respond to emergency conditions.

Provide telecommunications guidelines, standards, policy guidance and other assistance to the States in their development of emergency communications facilities and systems.

2. Federal-State telecommunications coordination:

Provide the Chairman, the Secretary and required overall administrative support for the Federal-State Telecommunications Advisory Committee established by the Director, Office of Emergency Planning.

Serve as a focal point in the executive branch of Government for the provision of advice and liaison to State and local government telecommunications officials.

Serve as a coordinator for the Director, Office of Emergency Planning, on all telecommunications activities referred to him by State and local government officials.

Foster a better understanding of telecommunications activities between Federal and State telecommunications activities by encouraging Federal and State participation in the development and adoption of mutually acceptable telecommunications planning methodologies and procurement policies.

TASKS NEEDING ACCOMPLISHMENT

The urgent telecommunications mobilization tasks awaiting accomplishment are as follows:

1. The task of determining total service requirements to be placed upon national telecommunications during emergency and civil defense conditions

Without a collection, analysis, and structuring of requirements effective administration of the President's authority over communications appears impossible. During fiscal year 1968 coordination has been effected with Government agencies and industry to begin the task. However, completion of the task will not be possible during fiscal year 1968. It will extend throughout fiscal year 1969.

2. The task of assessing and improving the national telecommunications resources capability to meet the requirements imposed by emergency and civil defense conditions

This is a continuing task for the Nation's telecommunications resources are continuously being rearranged, expanded and improved. The task is required to assure that essential Government and non-Government users are provided adequate and responsive services during emergency and civil defense conditions. No other Government agency or element of industry has assessed, or plans to assess, this total capability.

3. The task of devising an organizational structure for effective administration of the Nation's telecommunications during emergency conditions

This is a major task involving the cooperation of all departments and agencies of the Federal Government having assigned telecommunications responsibilities. Existing authority is fragmented to such an extent that delays, tolerable under normal conditions, could occur which would adversely affect the ability of the President to exercise his command, direction and control of functions during emergency and war conditions.

Since appointment, the Director has given prime consideration to this task. In fiscal year 1967, agreement was reached with the Director, OEP, and other Government agencies that at some stage of escalation:

a. A separate agency, the National Office of Telecommunications, will be created to exercise administration over the national telecommunications resources. This agency would be, in effect, an expansion of the Office of the Director of Telecommunications Management.

b. The Director of Telecommunications Management will assist the Director, OEP, by performing adjudication of all mobilization activities involving telecommunications resources claimancy.

4. The task of administering the war-emergency authority of the President contained in the Communications Act of 1934

While preemergency/prewar planning might be accomplished quite efficiently, no war was ever progressed as it was preplanned. The administration of the President's authority under subsections 606(a), (c) and (d) cannot be conducted in a vacuum. That is, without a continuing and current knowledge of operating requirements as they are changed by the course of emergency-war operations. Neither can telecommunications responsiveness be instantaneous and meet emergency-war requirements on an adequate basis unless the capability to administer the authority of the President is available in advance of emergency-war periods. There is a peacetime requirement to establish a status and control telecommunications facility for this purpose.

5. The task of establishing preemergency/prewar policies, rules and regulations for emergency and war administration of telecommunications

This task looks towards the creation of policies and procedures during peacetime that will permit an efficient transition to a war footing, if required. The preplanning activities of major concern involve the development of precedence systems to govern the public message networks, war and emergency telecommunications claimancy procedures, control of aviation and maritime services telecommunications, and related control measures required in the event of emergency.

6. The task of mobilization planning

The Director of Telecommunications Management must be prepared to exercise the nationwide authority of the President during extreme national emergency conditions. This authority is contained in subsections 606(a), (c) and (d) of the Communications Act of 1934, as amended, and has been redelegated by the Director, OEP, to the Director of Telecommunications Management.

Activities in support of this responsibility assignment involve continuing discussions with industry and Federal and State Government officials; analysis of systems adequacy; updating of plans, administration and training of executive reservists who would augment telecommunication staffs during emergency conditions; reporting on damages accruing to national systems as a result of riots, civil disturbances, and natural disasters; provision of advice to Federal and State civil defense and other telecommunications officials; development of policies; publication and review of plans—Federal, State and local governments; and inspection visits to Federal, State and industry emergency operating facilities.

7. The task of communication support for natural disaster and civil disturbance activities

One of the greatest needs during, and immediately after, disasters is the need to communicate rapidly within the disaster areas and between the areas by the Federal, State and local government agencies and organizations involved. Communications are required for direction and coordination of disaster assistance forces for the relief of suffering and for restoration activities.

To date, no agency of Government has investigated this matter. Such an investigation is a responsibility of the Director of Telecommunications Management in cooperation with the Director, Office of Emergency Planning.

8. The task of coordinating the telecommunications emergency planning of the Federal departments and agencies assigned telecommunications responsibilities

As the concept for administration of the Nation's telecommunications developed during fiscal year 1967–68 and as the overall method of exercising the President's war emergency control over telecommunications became clearer, coordination on emergency telecommunications matters took on increasing importance and more time was devoted to it. Although most of this coordination was effected by the office by liaison with the individual departments and agencies, with the States, and with industry, additional emphasis and impetus was provided by:

a. Participating in the Interagency Emergency Planning Committee activities. This is a committee composed of representatives of all Federal departments and agencies and one which is chaired by the Director, OEP.

b. Participating in the National Industry Advisory Committee activities. This is a committee composed of industry officials which is sponsored by the Federal Communications Commission to develop and recommend actions on

all responsibilities assigned to the Commission by Executive Order 11092.

c. The DTM's creation of an Ad Hoc Intragovernmental Emergency Telecommunications Committee. This committee is comprised of representatives of: the DTM (provides the chairman); the General Services Administration; the Department of Commerce; the manager of the National Communications System; and the Federal Communications Commission.

This task will continue and its activities will expand during fiscal year 1969.

9. *The task of conducting NATO civil emergency planning coordination (NATO–CCPC).*

This is a continuing task. Considerable coordination has been effected on NATO–CCPC matters with the Department of State, the Department of Defense and the Office of Emergency Planning. This task is expected to increase in intensity during fiscal year 1968 since the CCPC is becoming more and more involved in international emergency telecommunications and since a restructuring of NATO telecommunications has been proposed because of France's announced intention with respect to NATO.

The urgent Federal-State telecommunications tasks awaiting accomplishment are as follows:

1. Within the framework of the Federal-State Telecommunications Advisory Committee, develop and recommend policies and procedures which can be mutually adopted by the Federal and State Governments concerning:

How could States establish adequate management structures for coordination of State telecommunication activities and for coordination with Federal Government telecommunication officials on activities of mutual interest to Federal and State Governments?

How could States develop statewide all-purpose telecommunication systems in lieu of the many and separately independent systems which now exist in almost all States?

What are the Federal, State and industry responsibilities in the development of adequate nationwide communications in support not only of day-to-day operations, but also in support of emergency, natural disaster, civil disturbance and civil defense operations?

How could the funds being provided to State agencies in the many Federal assistance programs be consolidated at the State level of Government so that adequacy of service and cost savings may be obtained in overall State and Federal operations?

How could Federal assistance funds be provided to the States for development of telecommunication programs when more than one State is involved?

To what degree should Federal and State systems be permitted to interconnect for the effective interexchange of information?

What should be the Federal and State policies pertaining to the development and procurement of Government-owned and Government-leased telecommunication services and facilities?

To what extent should single Federal and State communication systems support multinumbered functions such as highway, law enforcement, and medical operations?

To what extent should civil defense funds be provided for communication systems and services procured for day-to-day operations in view of the fact that such systems and services will be required for use during civil defense activities?

To what extent should the Federal Government and State governments' systems be interconnected to support communication requirements of mutual interest to governments?

2. Develop a structure in the Office of Telecommunications Management which can adequately support the Chairman and the overall administrative requirements of the Federal-State Telecommunications Advisory Committee. This structure should also provide professional support for the development of DTM positions on matters being considered by the committee as well as professional personnel who can provide liaison to State telecommunications officials and coordination of Federal-State telecommunications activities for the DTM.

3. Determine the impediments—legislative, operational, administrative, financial—to the coordinated development of adequate Federal and State telecommunications systems, facilities, and services of mutual interest to Federal and State officials and recommend actions for overcoming these impediments.

4. Encourage and foster increased coordination and the mutual development of telecommunications policies by Federal and State telecommunications officials.
5. Provide increasing liaison with State telecommunications officials and with elements of industry, regional bodies, nonprofit and profit organizations conducting efforts in support of State and local government telecommunications activities.
6. Provide a focal point in the executive branch of Government to which State and local government officials may turn for advice and assistance on telecommunications activities.
7. Continue the conduct of special Federal-State telecommunications studies in such areas as highway traffic control, safety, and emergency operations; health requirements, including communications to support the continuing education of physicians, dentists, and other health professionals; law enforcement; and emergency operations resulting from natural disaster and others.

Research and Technology

Mr. Evins. Take a look at research and technology. General, you have been conducting research for years. How much money are you going to spend for research next year?

Mr. J. D. O'Connell. $800,000.

Mr. Evins. Are these to be private contracts?

Mr. J. D. O'Connell. The items to be covered are in here. They will be either private contracts or money given on contract to a Government agency such as the Central Radio Propagation Laboratory of the Department of Commerce.

Mr. Johnson. Most of the funds are for radio spectrum studies.

Mr. Evins. You expect to let some contracts for radio spectrum studies. How many other agencies of Government engage in this same activity? FCC is asking for moneys for research in the spectrum.

Mr. J. D. O'Connell. I would say that at the present time there are only two. We and the FCC are the only ones pursuing a spectrum research program. We coordinate our programs completely. There is no overlap or duplication.

Contractual Studies

Mr. Evins. Turn over from page 48 to page 85. This is your contractual studies. In 1969 contractual studies are designed to initiate minimum essential study efforts in critical areas. They will point toward accomplishing increased efficiency and effective utilization of our resources. Specifically, the funds requested are designed to effect future economies in frequency management, monitoring duties, and early implementation of the national communications system.

Also, you say policy studies pertaining to the administration of the Communications Satellite Act of 1962 and further development of research analysis capabilities will receive special emphasis. A major effort has been projected in the area of studies and research to devise new means of improving our use of the radio spectrum. How many of these studies have been made?

Mr. J. D. O'Connell. Four studies during the past year.

Mr. Evins. Four studies were made during the last year. Do the studies that you propose for next year in any way overlap or duplicate what you did last year?

Mr. J. D. O'Connell. The ones we did last year just got us off the mark and got us started. They are the foundation on which we must build our future studies.

Mr. EVINS. You had four last year. How many studies do you propose for next year?

Mr. JOHNSON. Nine in the area of radio spectrum research.

Mr. EVINS. How much did it cost last year, your research study effort?

Mr. J. D. O'CONNELL. $600,000.

Mr. EVINS. How much for next year, again?

Mr. J. D. O'CONNELL. $800,000.

Mr. EVINS. Besides spectrum use, what other studies do you propose?

Mr. JOHNSON. There's a total of 13; nine are in the radio spectrum area, one in research and technology of basic factors for encouraging research in the communications field, one in the field of the application of the President's emergency powers, studies and research in that area; communications support in time of crisis; one in the area of national communications, the administration of Government communications facilities, policy studies in that area.

Mr. J. RAY O'CONNELL. The other one we mentioned was the continued use of contracts for our data processing conversion program for the management of frequencies.

COST SUMMARY OF CONTRACTUAL STUDIES

Mr. EVINS. For the record, supply a summary of your contract research program, including the estimated costs in each area.

Mr. J. D. O'CONNELL. We will do that.

(The information follows:)

OFFICE OF TELECOMMUNICATIONS MANAGEMENT

PROGRAM OF STUDIES AND RESEARCH

The need for contract research.—The fundamental objective of the contract research program is to provide the factual base and analytical support to guide and justify the hard policy decisions necessary to achieve really effective use of the spectrum.

To make the significant decisions needed in this area, we need to know with precision and certainty:

How and for what purpose the spectrum is being used.

The number of equipments in use.

The location of use and the technical characteristics of each application.

With a solid base of engineering data, we can continue and extend our job of accommodating new requirements and expanded use without the dangers from harmful interference which currently plague some bands of the spectrum. We will also have a basis to judge economic and social values of the use of the spectrum —to make an intelligent evaluation of who should get parts of the spectrum in the face of competing claims—all of high priority.

The role of the FCC and DTM in spectrum management.—The need for basic spectrum engineering data is apparent both within the FCC and the DTM. In the Communications Act of 1934, the Congress has charged the FCC and the President jointly with assignment of radio frequencies and management of the radio spectrum. Specifically:

The FCC is responsible for regulating interstate and foreign commerce in communications by radio and wire and under sections 301 and 303 of the act for the assignment of radio frequencies and prescribing regulations and standards for their use.

The DTM has responsibilities for the assignment of radio frequencies to Government agencies which flow from section 305 of the Communications Act and Executive order.

Section 305 of the Communications Act provides Government stations shall use such frequencies as shall be assigned to each or to each class by the President. Section 606 of the act sets forth the war emergency powers of the President and contains the authority for the President to direct that such communications as in his judgment may be essential to the national defense or security shall have preference or priority with any carrier subject to this act.

Executive Orders (Executive Order 10705, Executive Order 10995, and Executive Order 11084) assign definite responsibilities to the Director of the Office of Emergency Planning and the Director of Telecommunications Management. The Director of Telecommunications Management is responsible for the development of data with regard to the U.S. Government frequency requirements, coordination of telecommunications activities in the executive branch of the Government and the authority to assign radio frequencies to Government agencies.

The elements of the program.—The responsibilities of the Director of Telecommunications Management include the establishment of policies, and the management and coordination of telecommunications activities of the executive branch in its entirety. Because of the fundamental nature and overriding importance of the radio spectrum to so many telecommunications activities, 80 percent of the contract research program has been devoted to spectrum studies. At the same time, it is essential to maintain some research effort in the field of national telecommunications policies and communication satellite studies and research.

Spectrum studies.—Based on experience with our contractual studies and in-house efforts in support of policy development, we are convinced that in order to fill gaps in present knowledge, a hard core of research and development in the frequency management area must be continued as a matter of priority. Specifically, we need to know in quantitative terms the degree to which the spectrum is actually employed (numbers of equipments, locations, and extent of use). Once these data are obtained, deadwood and lesser important uses of the spectrum may be culled and reviewed with a view to accommodating increased requirements. From an engineering standpoint, it is essential that we acquire sufficient data base (frequency usage, equipment characteristics, interference potentialities) to enable frequency managers to predict/engineer with confidence the extent to which interference might be experienced in the introduction of new communication-electronic devises into existing environments. Additionally, there is an urgent need to develop a base for value analysis (that is, economic and social values) of the use of the radio spectrum, and the injection of such considerations into the formulation of national policies with respect to spectrum usage. These objectives are vital to both Government and non-Government use of the spectrum and constitute pioneering undertakings in this area.

The key elements of the program in order to obtain efficient spectrum management are:

1. Adequate facts and data base.
2. Value analysis of the radio services.
3. Continuing information as to telecommunication research in progress.
4. Engineering capability to keep interference to a minimum.
5. Development of standards and policies.
6. Adequate measurements of use of the spectrum.

The elements which will be pursued during the coming year are:

1. Improvement in automated data-processing techniques. This is imperative if the vast amounts of data are to be treated on a near-real-time basis.
2. The development of standards applicable to both transmitters and receivers which will conserve the radio frequency spectrum and prevent the problem from getting progressively worse.
3. The establishment of value analyses.
4. The establishment of usage information.
5. The treatment of case studies.

If the foregoing tasks are not undertaken, the executive branch will be handicapped severely in areas such as the following:

1. Restricted ability to support from a frequency standpoint the large and vital requirements of the Defense Establishment in connection with overall readiness and the Vietnam war.
2. Deficient planning for U.S. participation in international conferences pertaining to the use of the radio frequency spectrum for space applications, particularly communication satellites.

3. Continued limited ability to assist measurably in the solution to problems such as those connected with the critical non-Government land mobile situation and the Sentinel (antiballistic-missile) program.

4. In summary, ODTM will have to continue to operate in a vacuum so far as quantitative data with respect to the radio frequency spectrum are concerned.

National Telecommunications Policy and Communications Satellite Studies.—This area of research will concentrate on communications satellite policy studies—studies to improve the management of the national communications system—especially the communications needs of the President in time of crises—and the basic factors of telecommunications research and development. It is of vital importance.

The Task for the Coming Year.—The general task areas of the contract research program are noted below. Each task area is described in greater detail in the summaries which follow:

1. Development of Data Processing Techniques.
2. Standards and Measurements for Improved Spectrum Utilization.
3. Determining Value(s) of the Radio Spectrum and Its Use.
4. Spectrum Usage Reporting Program.
5. Case Studies of Spectrum Use Problems.
6. National Telecommunications Policy and Communications Satellite Studies.

I. Title

DEVELOPMENT OF DATA PROCESSING TECHNIQUES

II. Purpose

To provide a powerful enough tool to deal with detailed technical complexities of radio equipments using the radio spectrum. New assignments permitting such equipments to operate come in at the rate of 2,000–3,000 per month, and therefore, new equipment operations are many times this. These new equipments cannot operate if they interfere with already existing and operating equipments or with each other. The ADP techniques developed with these funds are only a small step in the direction of providing the necessary engineering capability for allowing the most effective use of the spectrum. In particular this year, these funds will (a) provide a land mobile radio service model; (b) provide an engineering capability for microwave point-to-point systems; (c) provide a near real time assignment review capability; (d) introduce display techniques to provide statistical reports.

III. Impact

Without effective engineering tools, radio frequencies will not be available in sufficient supply to serve this Nation's needs. The increasing volume of demands cannot be met without adequate support tools. This computational facility can do quicker and more reliably what it would require at least 100 professional engineers, technicians, and other specialists to accomplish by manual methods.

I. Title

STANDARDS AND MEASUREMENTS FOR IMPROVED SPECTRUM UTILIZATION

II. Purpose

A. Obtain information on technical standards which are applied to radio equipment dependent for its operation on the utilization of radio frequencies in all allocated parts of the radio frequency spectrum. Determine the means in which these standards are applied.

B. Develop a detailed rationale for the development of standards and their application and verification.

C. Develop a sound detailed understanding of the different ways in which equipment standards and measuring techniques support effective use of the radio spectrum.

D. Propose steps to rectify deficiencies in the development and application of standards and measuring techniques to effectively utilize the electromagnetic spectrum.

III. Impact

Without this program the present state of confusion will continue and many frequency assignments will have to be made without adequate technical information. Interference conditions, jeopardizing vital activities, such as military communications, space flights, etc., will continue to arise. Substandard radio emissions will continue to make unusable many parts of the spectrum, inhibiting the development and implementation of more or better electronic equipments.

I. Title

DETERMINING VALUE(S) OF THE RADIO SPECTRUM AND ITS USE

II. Purpose

To develop a basic understanding of values relating to the radio spectrum. In apportionment of this most valuable natural resource, there has never been a fundamental determination as to how the radio spectrum should best be assigned to serve the Nation. Radio services provide communication for protection, make high speed transportation possible, and provide entertainment, but there has never been any systematic basis for determining how much of this resource should be allotted for serving each of these purposes. Or, in other words, a 20.3 billion a year industry is floundering in an increasingly stormy sea of uncertainty.

III. Impact

Without a value analysis basis for assigning use of the spectrum, police will continue to lack effective communication systems, land mobile uses will be inadequate, and new techniques will not see implementation to aid our economic growth and permit new services to be accommodated. Again initial efforts will be jeopardized.

I. Title

SPECTRUM USAGE REPORTING PROGRAM

II. Purpose

The purpose of this program is:

a. To enable the selection of frequency bands within which new uses, radio service, might be supported or new equipment might be developed.

b. To permit analysis or review of frequency allocation plans to assure the equitable distribution of spectrum space among different radio services.

c. To insure that existing frequency assignments are being employed effectively.

d. To provide a basis for international adjudication of interference situations.

e. To justify the intention of existing frequency assignments in the national and international environment.

f. To provide useful data for effective day-to-day management of frequency assignments.

g. To reduce the likelihood of interference situations before they develop.

h. To obtain more use out of frequencies on existing assignments.

III. Impact

Without adequate information on how the spectrum is being used, it is impossible to perform a management function. Every major international crisis will continue to be a crisis in availability of radio frequencies. New services will go unimplemented; old services will not respond to new needs; interference to other countries radio equipment will continue to cause embarrassment.

I. TITLE

CASE STUDIES OF SPECTRUM USE PROBLEMS

II. PURPOSE

To document in detail specific cases illustrating the hazards and operational problems encountered under the current inhibitions to the full exploitation of the radio spectrum. Case studies will treat such problem areas as:

a. Lack of adequate spectrum planning.

b. Expenditures involved in rectifying interference situations.

c. Limitations on the operational capabilities of communications-electronics systems due to poor characteristics such as spurious or harmonic radiations from transmitters or poor receiver design.

As this program progresses, we will be able to give Congress for the first time some concrete examples of how much inadequate frequency management is costing the Nation and our economy.

III. IMPACT

This is a necessary part of the comprehensive data base required for spectrum management. Without case histories, which set forth in quantitative terms the cost in both dollars and operational efficiency caused by remedial measures, present practices will be continued whereby sensitive and expensive communications-electronics systems will not see full utilization because of not having the benefits of advanced engineering studies which would predict the likelihood of harmful interference. In other words, we will not benefit from past mistakes.

I. TITLE

NATIONAL TELECOMMUNICATIONS POLICY AND COMMUNICATIONS SATELLITE STUDIES

II. PURPOSE

This area of research seeks to construct an information base which can support dynamic policy development—which meets the needs of our modern society—and which can keep pace with rapid changes in technology. The program of study encompasses interdisciplinary research to include critical national problems, particularly those which occur at the interface between new communication techniques and the economic, legislative, political, administrative, and social institutions. Communications satellite studies are the primary example of this class of policy problem. In the coming year we must take a number of key policy decisions on the use of communications satellites—for domestic communications purposes—to support educational objectives—to develop definitive arrangements for Intelsat and the global system.

III. IMPACT

A solid base of national communication policies is essential to the future of the Communications Satellite Corp. and the accomplishment of U.S. objectives, both domestic and international. The successful use of telecommunications to support national objectives is even now in serious jeopardy. If we do not carry out the necessary policy research, we will lose our ability to exercise major influence on the direction of communication progress throughout the world.

Cost summaries

Fiscal year 1969 contracts:	*Estimated cost in thousands of dollars*
1. Continued development of automated data processing techniques for radio frequency management	250
2. Spectrum allocation versus spectrum usage	50
3. Economic values of the radio spectrum and its use	57
4. Social value of the use of the radio spectrum	44
5. Methodology for determining value of radio spectrum and its use	44
6. Relationship of economic and social value	55
7. Review of existing measurements and standards for spectrum use	100
8. Case studies of spectrum use problems	40
9. Communications satellite broadcast technology	30
10. Basic telecommunications policy research	30
11. Research and technology basic factors RTD–1	20
12. Communications support in time of crisis	30
13. National communications policy factors NCD–4	50
Total	800

JUSTIFICATION MATERIAL

Mr. Evins. Place this material shown on pages 85 through 92 into the record.

(The pages follow:)

XII

CONTRACTUAL STUDIES AND RESEARCH

The fiscal year 1969 contractual studies and research program is designed to initiate minimum essential study efforts in critical areas of national importance most of which have been specifically identified as needed by congressional committees and will point the way toward dollar savings, increased efficiency and effective utilization of telecommunications resources. Specifically, the funds requested are designed to effect: future economies in frequency management allocation review, and monitoring duties; early implementation of the national communications system, which will permit economy in governmental procurement and utilization of communications concurrent with increased operational effectiveness during day-to-day operations and during periods of national and international crises; and to provide consistency and effectiveness in international telecommunications matters to the best interests of the United States and the economy. Policy studies pertaining to the administration of the Communications Satellite Act of 1962 and further development of research analysis capabilities will receive special emphasis.

A major effort has been projected in the area of studies and research to devise new means of improving our use of the radio spectrum. This great public resource is suffering from pollution as are air and water resources. It is in need of development of improved technical standards to guide its use and sound methods must be found to determine the relative national importance of different uses of the spectrum.

The studies outlined below represent areas of major concern in which study and research projects have been identified. The contractual plan provides for major effort in studies identified as priority I, Priority II study projects will be grouped together and pursued only to the extent of completing exploratory definition.

Under the section entitled "Other Necessary Research," we have identified research projects which need to be carried out, but which should be accomplished by other agencies. Such studies and investigations are described with appropriate notations indicating the specific agencies that will be requested to make provision for the necessary resources and to carry out the work. This procedure

has been followed in order to clearly indicate the large amount of work needed, to show the completeness of the DTM's overall programs and to assist the other agencies in relating their requests for the necessary funds to the entire framework as a part of their justification.

PRIORITY I

1. Continued development of automated data processing techniques for radio frequency management

This is a continuing effort, begun in 1962, to establish a Central Government facility with the capability to store adequate data and manipulate them quickly to engineer assignment and use of frequencies and to produce the statistical facts essential to sound management. The ultimate objective is a National ADP Support Center to engineer assignments and uses of frequencies on a real time basis for all agencies wishing to avail themselves of the service, with the master file made current each day and immediately available for consultation and use via data links. ADP techniques are being introduced step-by-step as computer logic and programs become available and the necessary technical data can be furnished by the agencies.

During fiscal year 1967, the initial ADP system (phase I) with automated source data was brought into use (Sept. 13, 1966) in support of daily frequency assignment activities, information retrieval, file maintenance, related printing functions, and engineering analyses of point-to-point use of frequecies below 30 Megahertz, using National Bureau of Standards computers. Phase II of the program, started in the second quarter of fiscal year 1967, was completed by mid-fiscal year 1968. In this phase we: (*a*) converted existing computer programs to work with the OEP UNIVAC 1108 computer; (*b*) introduced augmented capability for machine checks of accuracy of input and file data to release manpower; (*c*) introduced an initial capability to check requests against the table of frequency allocations; and (*d*) increased the capability to generate management statistics in tables, charts and graphs.

Phase II of the program will be started in the second quarter of fiscal year 1968 and completed in fiscal year 1969–70. Specific goals for fiscal 1969 are:

a. Introduce an engineering model for the land mobile radio services in the frequency range 30 to 200 Megahertz;

b. Introduce an engineering model for microwave point-to-point application, including terrain data;

c. Introduce the capability for ADP review of requests for the assignment of frequencies with respect to the provisions of the Manual of Regulations and Procedures; and,

d. Introduce an initial spectrum management statistical and reports generation system to include real time display techniques (this part of phase III will not be completed until about January 1970).

2. Spectrum allocation versus spectrum usage

This study will investigate the theory and practice of assigning specific frequencies for use. It is the intent of this study to ascertain in technical terms, how in fact the radio frequency spectrum is being used. This entails the indexing and correlation of information on quantity, location, and duration of operation of the various equipments, and/or systems operating through the radiation of controlled electromagnetic energy. This is to be accomplished through collection of comprehensive lists on equipment information, and the actual measurement and inspection of areas containing equipments using the spectrum.

3. Economic values of the radio spectrum and its use

This study is to determine the economic value of the radio frequency spectrum and its users. This will include determination of national economic value and relation to gross national product, and the capital investment in systems and equipment utilizing the radio spectrum (including economic relationships between radio and wire line systems). This study will also ascertain and quantify any other significant indicators of economic value.

4. Social value of the use of the radio spectrum

This study will analyze the radio spectrum and its use, as it relates to society. This will include developing an understanding of the importance of the services performed by systems using the spectrum, and of the way in which the various types of systems which are available relate to the type of information needs

which require satisfaction. In other words the purpose of this study is to understand national value from the standpoint of public benefits (safety and other noncommercial service), and in general the influence of radio spectrum use in modern society.

5. Methodology for determining value of radio spectrum and its use

This study will be carried on concurrently with the other studies on determination of radio spectrum value, and will be aimed at developing a methodology for utilizing the information derived from them. This study will enable the development of a means for systematically incorporating economic and social value information along with the necessary technical information to bring about more effective utilization of the radio spectrum.

6. Relationship of economic and social value

The purpose of this study is to synthesize the findings of the economic and social value studies. This effort will determine the areas in which they are related and unrelated, investigate how trade-off's may be performed, and the relative significance of each vis-a-vis each other, and effective spectrum development.

7. Review of existing measurements and standards for spectrum use

This effort will review existing standards and techniques for specifying equipment and systems using the radio frequency spectrum. In so doing, it will identify deficiencies in the measurement methods employed and the accuracy with which the measurements are made and the standards specified, for such indicators of spectrum usage as power levels, field strengths, and transmitter emissions.

8. Case studies of spectrum use problems

This study is intended to thoroughly document and explain examples of the different types of problems which are encountered in the development of the radio frequency spectrum. Such case studies will cover such areas as (1) monetry waste through lack of program organization; (2) jeopardizing of person and property from over-used frequencies, and (3) the deleterious effects to proper communications systems operations because of uncontrolled radiation, and inappropriate equipment design. Such a study will serve to educate and broaden public and policy making knowledge regarding the need for adequate spectrum development programs.

9. Communications satellite broadcast technology

The technology to provide both the transmission and reception of quality television and voice signals from stationary satellites is presently being developed and soon will be a reality. Sufficient power will be available in the satellites to provide a variety of signals to different magnitudes of coverage area. Although this technology is on the threshold of possibility, its operational implementation is presently impossible because of a myriad of organizational, political, economic and regulatory barriers: i.e., there are presently no international allocation and there is uncertainty as to its application to other countries of the world. If the public is to benefit from this technology and its many unique applications realized, it is necessary to overcome current impediments. A detailed study is needed to determine the steps necessary to bring about the use the technology both domestically and internationally.

10. Basic telecommunications policy research

There is need to establish a continuing program of integrated, interdisciplinary research and analysis on selected critical problems, particularly policy-relevant problems at the interfaces between communications technology and economic, legal, political, administrative, and social institutions. It is proposed to establish such a program through a contractual arrangement with one of the nonprofit research organizations. This program will provide for DTM participation in a much larger effort which is to be funded through specific projects of other Government departments and agencies, and by one or more of the national foundations. It will:

Develop and provide a continuing capability to assess the effects of alternative policy proposals upon Government agency operations.

Provide a source of objective consultation and advisory services for those agencies concerned with telecommunications.

Act as a catalyst to bring other research groups into contact with the significant issues in telecommunications.

Call attention to future opportunities as well as problems deserving of attention by scholars, officials, and interested agencies.

Provide a central repository for the collection of information and analyses concerning telecommunications for the use of qualified persons and groups.

11. Research and technology basic factors RTD–1

Review appropriate plans and technological forecasts of Government agencies to identify research and development required. Review in-house research and development tasks of Government organizations and industry to determine what total research and development is being done. Weigh the research and development being accomplished by Government and industry against that needed to identify research and development deficiencies.

This effort will be performed through contractor assistance and will be a key effort of the research and technology directorate. Its purpose will be to more accurately identify the telecommunications studies, research and development which should be accomplished, but is not now being done by any of the Federal organizations or private industries. The overall task will be divided into a grouping of subtasks with each task consisting of a complete review of the state of the art, research and development underway, and research and development still needed in a particular discipline. It is expected that upward of 30 subtasks will be needed to cover the entire telecommunications area. Examples of these subtasks are: millimetric wave communications, transmission systems, communications satellites, automatic message processing, microwave communications and time division-frequency division methods and equipments.

Because of the limited staff now existing within the research and technology directorate, all tasks will not be immediately undertaken.

12. Communications support in time of crisis

Undertake with contractual assistance an analysis of the day-to-day and crises functions of the Presidency to determine telecommunications support requirements. This will involve analysis of crises situations in the past inclusive of those arising from natural disasters. Having identified requirements, determine telecommunications conditions and means for requirements satisfaction.

A contract is to be let about March fiscal year 1968 to provide assistance necessary to accomplish the work described above. A request will be made upon the DOD and other appropriate Government agencies or offices to assist in funding the fiscal year 1968 effort.

13. National communications policy factors NCD–4

Obtain contractual assistance to provide information on existing telecommunications policy and legislation and related policy and legislation which bear on telecommunications; identify the impact of such policy and legislation on today's telecommunications; identify the organizations which carry out research and development, manufacture, operation and management; identify how these organizations cope with existing policy and new policy; identify the organizations that are affected more than others and why; recommend a method of forecasting and evaluating new policy impact and organization reaction.

A contract was let during September fiscal year 1968. This contract is designed to perform a three month contract definition study for the purpose of determining the approach to be taken in meeting the needs of the office as described above.

NATIONAL COMMUNICATIONS DIRECTORATE

Mr. EVINS. Take a look at national communications directorate summary. You list some more tasks that need to be accomplished.

Mr. J. D. O'CONNELL. Here is where, working with the Bureau of the Budget, we need to get a better understanding of what our costs in all departments are, in all departments with significance to telecommunications.

Mr. EVINS. Insert pages 56 through 61 into the record.

(The pages follow:)

IX

NATIONAL COMMUNICATIONS DIRECTORATE SUMMARY

National communications responsibilities set forth in Executive Order 10995, as amended, and in the President's memorandum of August 21, 1963, "Establishment of a National Communications System," form a major portion of the responsibilities assigned to the Director of Telecommunications Management.

To carry out the assigned responsibilities, the Director of Telecommunications Management has established the following national communications objectives:

1. Provide policy guidance for development of national telecommunications.
2. Provide policy guidance for a National Communications System which will be planned as a single system, implemented as a single system and operated as a single system to meet the needs of the Federal Government under all conditions.
3. Develop working relationships between the Director of Telecommunications Management and the executive agent of the NCS so that policy direction can effectively influence further NCS development and which will place maximum management responsibilities at the operational level.
4. Provide financial planning and program review procedures for the National Communications System.

TASKS NEEDING ACCOMPLISHMENT

Accomplishment of the foregoing responsibilities and objectives requires the conduct of several urgent national communications tasks. These are described in the following summaries:

1. Telecommunications and computers

Review and evaluate reports and planning documents pertaining to telecommunications requirements for computer systems of the national communications system, other Government agencies and industry. Develop policy and guidance needed to support homogeneous development of standardized national communications system information systems and the requirements for telecommunications interconnection. Identify factors inimical to meeting objectives and alternative approaches to their solution.

2. Legislative studies

Review and evaluate plans and report documents and determine through such other studies, as required, the needs for telecommunications capabilities in non-telecommunications activities. Identify the benefits to be obtained through providing such service and identify and provide guidance on potential roadblocks to progress toward meeting objectives. Develop guidance and new policy or changes to existing policy, recommendations of new legislation or changes to existing legislation as may be required.

3. International telecommunications

Appraise U.S. policy in the field of international telecommunications and provide support to the Department of State; promote cooperation and coordination among concerned Government agencies and the U.S. telecommunications industry. Continue evaluation of the need for updating the structure of U.S. international common carriers.

4. Policy impact evaluation

Obtain contractual assistance to provide information on existing telecommunications policy and legislation and other factors which bear on telecommunications; identify the impact of such policy and legislation on today's telecommunications; identify the organizational structures for carrying out research and development, engineering, manufacture, operation and management; identify the effectiveness of these organizations from the standpoints of progressiveness, economy, service in meeting public and national needs and objectives as a basis for forecasting and evaluating new policy impact and organizational and management structure.

5. Telecommunications objectives

Develop a plan of action and requirements for proposed changes to policy or legislation. Identify annual objectives. Coordinate with other Government agencies of interest.

6. Management studies

Identify and evaluate existing management systems in use by U.S. industry and the U.S. commercial domestic and international common carriers. Evaluate management systems of telecommunications organization within the Federal Government. Develop policy guidance and criteria for all levels of telecommunications organizations within the Federal Government. Provide the factual basis for telecommunications management legislation.

7. Department of State liaison

Maintain liaison and rapport with State representatives. Assist in identifying problems and issues. Develop technical, operational, economic, and systems guidance. Recommend policy or legislation changes where necessary.

8. Government-industry information exchange program

Survey industry and Government telecommunications activities to determine arguments for and against establishing an ODTM (Government)-industry information exchange program; identify methods and procedures.

9. NCS planning programing and budgeting system

Monitor and review national communications system activities from a planning, programing, and budgeting viewpoint in support of BOB.

10. NCS cost effectiveness

Determine guidance needed to improve the effectiveness and economy of telecommunications systems which operate in a supporting role to the primary mission of governmental departments and agencies. Prepare guidance which leads to the means for improving national communications system cost effectiveness.

11. Technological trends and their impact on national communications

Study the technological trends in communications to determine the impact of functional obsolescence on Government communications systems. Develop guidance to cope with functional obsolescence problems.

12. Technology and management systems

Study the impact of new technology on management systems of Government and commercial telecommunications organizations. Provide short- and long-range planning guidance for the national communications system design based on projected requirements, status of existing networks, and technological advances.

13. NCS analysis

Identify current status of the national communications system and review established program goals and related future plans and concepts for the progressive development of the national communications system within the Contus and overseas. Review output reports developed under tasks delineated in program III (this document). Develop policy guidance and criteria as it is required to achieve a single, unified national communications system.

14. Telecommunications support of the Presidency

Develop qualitative telecommunications support requirements for the Presidency throughout the spectrum of conflict from normal day-to-day operations through nuclear war. Contractual assistance required to support this task.

15. NCS traffic analysis—Impact of advanced systems

Collect and review documentation on Government-owned communications satellite systems or planned systems. Evaluate the growth of such systems and the contribution they make as an integral trunking media for the NCS. Develop guidance on the various uses for communications and other types of satellite systems for Government use through lease. Provide guidance and policy where necessary to define unique, vital or national interest requirements which can best be met through Government owned and operated communications satellite systems.

16. NCS standards

Determine the impact of existing standards on the integration of NCS component networks. Evaluate planned standards and the impact of their implementation on NCS integration and interconnection schedules. Review actions taken by the NCS manager and provide him with the guidance and assistance necessary to achieve complete technical compatibility of all NCS elements and connected networks of facilities. Obtain contractual assistance in accomplishing this task.

17. NCS customer satisfaction analysis

Monitor and measure NCS customer reaction-satisfaction. Determine criteria for reliability, availability and performance as concerns operational standards, methods procedures and operational organizations. Examine the magnitude of operational interfaces and the number and type of standards that are required. Recommend changes which will result in increase in speed of service, quality and less cost. This task will be assigned to the executive agent (NCS) for accomplishment.

18. Radio frequency conservation techniques

Review plans and programs of telecommunications activities of the Federal Government and prepare guidance necessary to encourage comprehensive study of telecommunications devices (equipment, systems) that might fulfill wide band trunking requirements via media other than the radio frequency spectrum. Through liaison with Government and industry telecommunications activities, determine examples of technological changes that should be considered for conversion of RF trunking to other means, that is, CATV concept, millimeter waveguides, laser pipes, high capacity transistorized cables, new modulation techniques. Promote evaluation of techniques which will allow increased circuit or channel capacities within a given bandwidth of radio frequency where the requirements demand that radio frequencies must be used.

Frequency Management Directorate

Mr. Evins. Here is frequency management on page 62. It seems to me like this is similar to FCC's work, frequency management. They manage the frequencies, do they not?

Mr. J. D. O'Connell. Not for Government use, sir.

Mr. Plummer. The FCC comes to Mr. O'Connell for its frequencies.

Mr. Evins. This is for the Federal Government. They manage the private sector.

Mr. J. D. O'Connell. That is correct, sir.

Mr. Evins. Place pages 62 through 78 into the record.

(The pages follow:)

X

Frequency Management Directorate Summary

The Office of Telecommunications Management Frequency management program is a continuing one designed to assist in achieving national goals, with emphasis on achieving the national objectives for the use of the radio spectrum. By force of circumstances, it is a program of management by exception, that is, the consideration of like matters through the application of rules, regulations and procedures, and case-by-case consideration of unlike or new matters as exceptions to the rules, etc.: when an exception becomes routine, provision is made for it within the system. In the interest of efficiency, economy and avoidance of duplication, it is carried on in close collaboration with the Federal Communications Commission (FCC).

The OTM frequency maangement program has six broad objectives which are:

1. Plan, manage, supervise, and regulate U.S. use of the radio spectrum in such a manner as to insure maximum contribution to the execution of national policies and achievement of national goals.

2. Provide policies, criteria, technical standards, regulations, justifications, and procedures for the acquisition and use of radio frequencies by Federal agencies so as to improve efficiency and effectiveness of use of the spectrum,

ensure maximum electromagnetic compatibility of operations, and avoid harmful side effects.

3. Insure that timely and adequate frequency assignments are made to Federal radio stations to meet needs found to be in the national interest, and to amend, modify or revoke such assignments as deemed necessary.

4. Provide a dynamic development plan and table of frequency allocations designed to accommodate changing national needs and technology so as to insure satisfactory accommodation of present and foreseeable frequency requirements found to be in the national interest.

5. Assist and advise the Department of State in the discharge of its functions in the field of international telecommunication policies, positions and negotiations.

6. Establish a central Government facility with the capability to store adequate data and manipulate the data quickly to engineer the assignment and use of frequencies and produce the statistical facts essential to sound management.

Considerable progress has been made to improve executive branch frequency management. However, much more improvement is essential to adequate support in reaching national goals and in obtaining maximum benefits from the use of the spectrum. For example, issuance of the Manual of Regulations and Procedures for Radio Frequency Management in August 1965 was a significant milestone. The manual continues to need improvement and expansion. Also, the introduction of automatic data processing (ADP) techniques into the frequency management program has made it possible, with no additional personnel, to handle a workload increasing at 6.8 percent a year with greater dispatch, accuracy and quality of product, and to give added and badly needed attention to technical and management activities. The fiscal year 1969 frequency management program is designed to continue and speed up this improvement, with major emphasis on: further development of ADP capability and service; acquisition, analysis, and application of essential facts to radio spectrum development and use; general management; and enhanced capability to assist and advise the Department of State with respect to the work of the International Radio Consultative Committee (CCIR).

Additional personnel are proposed only for radio spectrum development and CCIR work in the OTM.

TASKS NEEDING ACCOMPLISHMENT

Clearly defined specific frequency management tasks needing accomplishment are:

1. The task of frequency assignment and record-keeping

Objective.—To discharge the President's responsibility for the assignment of frequencies to United States and foreign government embassy radio stations in accordance with the Manual of Regulations and Procedures as expeditiously as possible to meet needs found to be in the national interest, and to amend, modify or revoke such assignments as deemed necessary.

Coordination and assignment of frequencies to Federal radio stations are effected as follows:

a. Each Government agency decides, in the light of policies, rules, regulations, frequency allocations and availability of frequencies, whether, what, and how much radio communication is needed to carry out its mission. The agency makes the necessary technical studies, selects possible frequencies, coordinates the selection with other agencies involved, and prepared and files an application with the executive secretary of the IRAC. (The FCC liaison representative to the IRAC submits memoranda requests on non-Government use of frequencies in shared frequency bands, and in other bands where he considers there might be an impact on or from Government operations.)

b. The IRAC Secretariat screens the applications for accuracy, completeness, and compliance with policy and procedures; assigns a docket number for identification; includes the particulars on the agenda of IRAC's Frequency Assignment Subcommittee (FAS); and distributes the agenda to each agency and the FCC for study

c. The Frequency Management Directorate meanwhile reviews the Government applications to insure adequate justification, compliance with policy and regulations, technical appropriateness, probability of major problems and whether there is a conflict with nonmembers of the IRAC.

d. Each month the FAS/FCC considers pending items and takes agreed action within policy guidance. When policy is needed, agreement cannot be reached, the IRAC has so directed, or an agency so requests, applications are referred to the IRAC/FCC. Matters which cannot be resolved within the IRAC/FCC, or when so directed by the DTM or requested by an agency, are referred to the Frequency Management Directorate where they are resolved or referred to the DTM. Matters of considerable importance, such as changes in the table of frequency allocations, significant Government use of non-Government frequency bands and advice to the Department of State, are recommended to the DTM for consultation with the FCC or other appropriate agencies. Although Government applications are not heard in public for security reasons, the public is represented by the FCC liaison representative to the IRAC who may object, concur or give tacit approval.

e. As soon as possible after each FAS/FCC meeting, the IRAC Secretariat enters the actions into the master record, prepared, has printed, and submits the list of frequency assignments to Government radio stations to the DTM for approval. Following DTM approval, distribution is made to the agencies.

f. The workload trend in frequency assignment and recordkeeping is reflected in the following table:

	Fiscal year 1955 actual	Fiscal year 1965 actual	Fiscal year 1966 actual	Fiscal year 1967 actual	Fiscal year 1968 estimate	Fiscal year 1969 estimate
Frequency assignment actions	16,700	32,775	32,854	32,163	35,000	38,000
Total frequency assignments to Federal agencies	(1)	104,000	110,691	116,310	122,000	128,000

[1] No data.

The number of frequency assignment actions, i.e., a new assignment, a change, a modification, or a deletion, is the one work element which has remained on the same base and has been recorded over the years. Since 1945, this element of workload has increased at an annual rate of 6.8 percent; or from 8,800 in 1945 to 32,163 in fiscal year 1967. Meanwhile, since fiscal year 1959, the personnel assigned to processing this workload and recording the actions has remained about the same. During this period, the number of persons engaged in recordkeeping has decreased 3 percent annually.

Improved methods and the introduction of ADP techniques make it possible in fiscal year 1969 to ask for no personnel increase for this work.

2. *The task of introducing automatic data processing and computers for improved radio frequency management*

Objective.—To establish a central Government facility with the capability to store adequate data and manipulate them quickly to engineer assignment and use of frequencies and to produce the statistical facts essential to sound management. The ultimate objective is a national ADP support center to engineer assignments and uses of frequencies on a realtime basis for all agencies wishing to avail themselves of the service, with the master file made current each day and immediately available for consultation and use via data links.

ADP techniques are being introduced step-by-step as computer logic and programs become available and the necessary technical data can be furnished by the agencies.

On September 13, 1966, the initial ADP system (phase I) was brought into use in support of daily frequency assignment activities, information retrieval, file maintenance, related printing functions, and engineering analyses of point-to-point use of frequencies below 30 MegaHertz. Natioal Bureau of Standards computers were used for this purpose.

To prepare to use the new OEP UNIVAC 118 computer, phase II of the program was started in the fall of 1966. In this phase, we have: (a) Converted existing computer programs to work with the UNIVAC; (b) introduced augmented capability for machine checks of accuracy of input and file data to release manpower; (c) introduced an initial capability to check requests against the table of frequency allocations; and (d) increased the capability to generate management statistics in tables, charts and graphs. Phase II will be completed by January 1, 1968.

Phase III planned for completion in fiscal year 1969 will introduce: (a) A model for engineering frequency assignments for the land mobile radio services in the frequency range 30–200 MegaHertz; (b) a model to engineer microwave point-to-point application; (c) capability for ADP review of applications with respect to the provisions of the manual; and (d) initial spectrum management statistical and reports generation system to include realtime display techniques.

Phase IV of the system, planned for fiscal year 1970, will incorporate data on: (a) purpose, extent and intensity of uses; (b) present investment in communication systems; (c) contribution to the GNP, productivity and efficiency; (d) relative values of uses; (e) growth and trends by frequency band and radio service; (f) unfilled and potential needs; and (g) growing congestion.

The ultimate ADP system, planned for completion by the end of fiscal year 1972, will constitute a National ADP support center to engineer frequency assignment and use on a realtime basis for all agencies wishing to avail themselves of the service, with the master file (record of uses and technical data) made current each day, via data links.

Benefits are already evident. Fewer persons are able to make more thorough review and apply better management with respect to a much greater workload. Management deficiencies have been and are being overcome rapidly. No application is held more than 1 month and frequency assignment actions are posted into the master file within 2 to 3 weeks after IRAC (FAS) decisions. The complete list of assignments is printed twice yearly, with monthly supplements, within 2 to 3 weeks after approval by the IRAC (FAS).

3. The task of providing frequency management regulations and procedures

Objective.—To provide the elements of frequency management (e.g., policies, criteria, technical standards, regulations, justifications, and procedures for the acquisition and use of radio frequencies by Federal agencies) vitally needed to improve the efficiency and effectiveness of use of the spectrum, insure maximum electromagnetic compatibility of operations, and avoid harmful side effects.

The development and codification of these elements of management in the Manual of Regulations and Procedures for Radio Frequency Management, issued initially in August 1965, has proved to be a valuable tool of management from the executive office down to the field. Since its issuance, it has been revised and improved quarterly.

During fiscal year 1967, the manual was revised, improved and expanded. Policy to govern spurious emissions was developed and promulgated. Standards in the form of minimum performance requirements for transmitters, receivers and antennas (above 4 MHz) were developed and issued for SSB equipments for single-channel voice communication in the mobile services between 2 and 30 MHz, and for single- and independent-sideband equipments in the fixed service between 2 and 30 MHz for transmitters with a mean power of more than 1 KW. The Government table of frequency tolerances was improved to the point that it equals or surpasses the ITU Table. Restrictions for radio door controls (garage) were developed in collaboration with the FCC, which issued them in a first report and order. Categories of justification for frequency assignments were developed and issued. Procedures for the advance coordination of earth stations in the band 1 to 10 GHz were issued. Procedures for the advance coordination of frequency usage in congested areas (mountain tops) were developed with the FCC who made them effective March 20, 1967. A comparable procedure for Government use has been drafted and is being studied. The IRAC radar engineering design objectives were adopted with some modification by the Department of Defense.

During fiscal year 1968 work will be completed on: national policy for the use of oblique ionospheric sounders; minimum performance requirements for radar; improved frequency tolerances for new transmitters after 1970 and 1975; expanding the table of tolerances for levels of spurious emissions above 235 MHz; standards for intruder alarms; and conversion of 406–4230 MHz land mobile FM equipment to narrowband FM.

During fiscal year 1969, efforts will be intensified to improve, develop and issue additional policies, standards, justifications, regulations and procedures as needed. Particular emphasis will be placed on the development of standards (minimum requirements) for transmitters, receivers and antennas in the VHF/UHF land mobile, other HF and other radio services.

4. The task of conducting frequency usage review

Objective.—To provide information to help assure that: radio frequency authorizations to Federal agencies are still needed and are used sufficiently to justify their continuance; agency management activities and practices are adequate and sound; approved policies, allocation conditions of assignment are followed; and that frequencies are still required and are being used for the purpose for which authorized.

The OTM has no monitoring facilities with which to insure compliance with terms of authorization or identify sources of interference. Frequency usage review is effected by examining existing authorizations, analyzing requests for assignment and inspecting Government radio stations.

This effort involves studying more than 100,000 assignments, on about 11,000 discrete frequencies, and an estimated 30,000 to 40,000 frequency assignment actions a year, of which about 17,000 are new assignments, and more than 12,000 are deletions, expirations or withdrawals. About eight to 10 Government frequency management activities and radio stations are inspected each year under the program described earlier.

Recently we have:

a. Analyzed the used of the frequency band 162–174 in the Los Angeles area in an effort to establish an approach to assist in an overall study of the land mobile problem in collaboration with the FCC.

b. Listed for review by the military agencies all frequency assignments to bases announced as being closed between 1962 and 1966 with a view to their deletion.

c. Reviewed 7,300 double sideband fixed assignments in connection with conversion to single sideband to determine whether to amend or delete the assignments.

d. Reviewed for deletion or amendment assignments with a bandwidth greater than 36 KHz in the band 406–420 MHz.

e. Initiated a procedure to follow up agency statements of intent to delete assignments to insure completed action.

These programs will be continued and new projects started during 1968 and fiscal year 1969 as manpower and workload permit.

5. The task of frequency allocation review and planning

Objectives: (1) To state the United States objectives in the use of the radio spectrum as a guide for the formulation of policies designed to achieve national objectives and the allocation and use of the spectrum; (2) to provide a dynamic table of frequency allocations designed to accommodate changing national technology; and (3) to develop a national plan for the allocation and use of the radio spectrum which will be a dynamic guide to the future to insure satisfactory accommodation of present and foreseeable frequency requirements found to be in the national interest.

This task may be divided into three subtasks which are:

a. Regular review and planning for the allocation and use of the spectrum which encompasses frequency review of the table of frequency allocations as necessary to meet changing national needs and to prepare for ITU Conferences and make changes to the table as appropriate.

The table was kept under continuing review and minor changes effected as needed. During fiscal year 1968 we completed an inventory of Government uses of the spectrum and the number of equipments in the various parts of the spectrum, including the investment in such equipments. This effort, started in fiscal year 1966, will be continued and refined in fiscal year 1969 and later years.

The IRAC/FCC are working together on the land mobile frequency problem in a newly established spectrum planning subcommittee (SPS) of the IRAC. To expedite the work, the SPS established three working groups to:

WG #1: Develop broad policies and procedures for the use and management of the spectrum and statement of needs;

WG #2: Evaluate spectrum allocations and provisions, with initial emphasis in the band 10–40 GHz; and,

WG #3: Examine the FCC land mobile problem urgently. Then evaluate the needs, new techniques, pressures on parts of the spectrum, changing requirements, etc.

During fiscal year 1968 we identified frequencies within the nonmilitary Government land mobile bands which could be shared with the FCC in the first 10 major urban areas, on condition that all land mobile suballocations be opened to general land mobile use and that all uses be engineered. This effort will be continued in fiscal year 1969.

Preparation for the maritime WARC conference (see task 6) was completed by early fiscal year 1968 and the U.S. delegation supported. The results of this conference will be implemented within the United States in fiscal year 1969.

b. Special review with respect to the space radio services. On February 28, 1966, we contracted (OEP–SE–66–7) for a study of space service spectrum needs through 1980 to determine the potential growth of and need for allocation of frequencies to the space services and the means of satisfying approved needs in the light of spectrum saturation. During fiscal year 1968 the report by the contractor was analyzed in conjunction with existing unfilled and possible future needs of other radio services, frequency allocation problems were identified and evaluated in connection with the next two items.

Rapid advances in space technology and capabilities, successful establishment of much of the global commercial communication-satellite system, and proposals for ETV via satellites with a large number of earth stations, raised doubt that the 1963 ITU EARC allocations of frequencies to the space services and conditions for sharing frequencies with terrestrial services would be satisfactory if the domestic use of satellites was approved. This confronted the FCC and the DTM with the unpleasant choice of taking far-reaching decisions in these matters without adequate information or deferring such decisions in the face of strong pressures.

In the circumstances, NASA was asked and agreed to define the requirements for an experimental measurements program to yield the facts essential to the establishment of criteria for the sharing of frequencies by space and terrestrial systems, determining the feasibility of using communication satellites for domestic services and broadcasting directly from satellites to the public, including the use of frequencies above 10 GHz. Specific measurement objectives, in order of priority, were:

(1) Terrestrial interference and propagation measurements (including off-path scatter);

(2) Propagation measurements above 10 GHz;

(3) Down-link (satellite to earth) interference measurements; and

(4) Up-link (earth to satellite) interference measurements.

The data sought through this program and from other sources are essential to wise decisions which allow for maximum exploitation of the space technique without damage or hindrance to the U.S. $2 billion microwave systems.

The measurements experiment was started in Fiscal Year 1968 and will be completed in Fiscal Year 1969. The results will then be analyzed in connection with the aforementioned contractor's report and the next item.

Under subtask 5.a., frequency bands between about 15 and 40 GHz which might be made available for exclusive satellite use were identified in fiscal year 1968. Considering the availability of such frequency bands, the report on space saturation and the results of the measurements experiment, in fiscal year 1969, and allocation plan to accommodate approved space requirements will be drafted and implemented, insofar as possible, within the ITU. A decision will be taken as early as possible on whether changes to the ITU table should be sought through as international conference. If a conference is considered necessary, the U.S. proposal therefor will be prepared during fiscal year 1969 and, if held, the results of the conference will be implemented in fiscal year 1970.

c. Radio spectrum development. In the DTM's report on frequency Management, October 1966, I recommend an OTM/FCC guided joint program of fact gathering, analysis, and planning to provide a radio spectrum development plan to make continually available guide for orderly development and exploitation of the spectrum, designed to insure satisfactory accommodation of present and foreseen frequency requirements found to be in the national interest.

During fiscal year 1967, the IRAC Spectrum Planning Subcommittee was established, a spectrum development division was started within the fre-

quency management directorate with two professionals to work full time with the FCC professionals, and a memorandum of understanding with the FCC and terms of reference for the joint group were drafted.

During fiscal year 1968, the FCC/OTM memorandum of understanding and terms of reference for the FCC/OTM joint radio spectrum development program were agreed; a contract was let for a compilation of basic factors bearing on use of the radio spectrum; resources for the future and the Brookings Institution sponsored a symposium on methodology to evaluate the relative values (benefits) of the various radio operations to the Nation, with papers by well-known authorities from Hofstra University, MIT, Yale University, Rand Corp., and the University of Rochester; a contract was let to collect and assemble information on "side effects;" a 5-year work program with schedules and cost estimates was drafted; work statements were prepared, and contracts let on the several study programs funded in the fiscal year 1968 appropriations.

During fiscal year 1969 work will be continued or started on:

(1) Obtaining information on use of the radio spectrum with respect to (a) comparison of radio spectrum allocations with actual usage; (b) case studies of radio spectrum utilization problems; (c) study of growth of radio "noise"—data base for yearly radio "noise" thermometer.

(2) Determining value(s) of the radio spectrum and its use: (a) development of methodology for determining radio spectrum values; (b) determination of economic value aspects (national economic value and relation to GNP; capital investment in equipment, etc.); (c) determination of social value aspects (national value from standpoint of public benefits—safety—influence of radio spectrum in modern society); (d) analysis and integration of information on social and economic values; and (e) investigation of special problems in spectrum values.

(3) Determining methods for improving use of the radio spectrum through: (a) analysis of technological aspects of spectrum usage improvement; (b) analysis of management aspects; (c) improving measurements and standards; (d) research in special problems in technology, measurements, and management.

(4) Planning future use of the radio spectrum: (a) determining future requirements; (b) study to determine recommendations for changes in statutes and Executive orders.

6. The task of international coordination of spectrum policy

Objective.—To insure that policies, views and needs of executive branch agencies are adequately projected in U.S. positions for international telecommunication negotiations; to identify U.S. treaty obligations and insure their discharge; and to assist and advise the Department of State in the discharge of its responsibilities in this field.

International frequency coordination is carried out through the ITU and with other countries within the ITU provisions, by or under the aegis of the Department of State. Coordination of frequency operational matters is effected also through the Inter-governmental Maritime Consultative Organization (IMCO), International Civil Aviation Organization (IACO), Intergovernmental Oceanographic Commission (IOC), and Intelsat. The IRAC is responsible under the United States-Canada Agreement relating to the coordination and use of radio frequencies above 30 megacycles per second of 1962 (as amended 1965) to effect coordination with respect to Government frequency usage and bands (TIAS 5205 and 5833).

Preparation of U.S. positions to international radio conferences; formulation of telecommunication policy advice to the Department of State; advice and assistance in coordinating with other countries, where not a function of the FCC; and guidance for implementing U.S. telecommunication treaty obligations usually originated in, or are carried out in, the IRAC/FCC. Recommendations of the IRAC/FCC, when necessary, are reviewed by the DTM and, if satisfactory, are coordinated with the FCC. The FCC conducts any rulemaking which may be indicated. The FCC and the DTM then make parallel recommendations to the Department of State for projection internationally.

Officials from the OTM, FCC and Government agencies having responsibilities with respect to the subject under consideration, serve as members of the U.S. delegation to international telecommunication conferences. In addition, private individuals serve as advisors to the delegation where appropriate.

During fiscal year 1967, preliminary views of the United States of America to the World Administrative Radio Conference to deal with matters relating to the maritime mobile service (September 18 to November 4, 1967) were developed, approved and circulated to other countries for study and comment. These preliminary views were discussed with officials of Canada and the United Kingdom, and in two joint civil/military meetings of the Allied Radio Frequency Agency (ARFA). As a result of these discussions and further study, the U.S. proposals were prepared and sent to the Secretary-General, ITU. Also, 1,130 Canadian and 345 United States proposed frequency uses within the United States-Canada Border zones were coordinated.

The Deputy Associate Director (FM), who is also Chairman of the IRAC, will serve as a Vice Chairman of the U.S. delegation to the Maritime WARC.

7. The task of maintaining the emergency readiness plan for use of the radio spectrum

Objective: To provide a national frequency plan for use of the radio spectrum in a war emergency to: (a) satisfy urgent military requirements in the most expeditious manner; (b) provide for continued operation of services vital to national security and welfare; and (c) provide for transition between war emergency and peace with a minimum of impact on established operations.

During fiscal year 1967 a complete revision of the emergency readiness plan was started to effect improvements. This work was completed and the revised plan issued in fiscal year 1968.

During fiscal year 1969 the plan will be maintained current.

8. The task of resolving problems

Objective.—To resolve problems wherever possible, thereby relieving the DTM for more important tasks.

Earlier I described a procedure whereby I personally, with the FCC Chairman included on matters of interest to the Commission, question and hear the Government agencies on important matters. An important aspect of this procedure is an arrangement whereby my Associate Director (FM) considers and decides routine questions and matters referred by the IRAC by direction or where IRAC agreement cannot be obtained. Where he cannot resolve the matter or significant issues are involved, he develops the facts, recommends a letter for my approval, or recommends that I hear the issue.

On the average he resolves about 10 routine requests for assignment of frequencies and one or two substantive issues a month.

OTHER OBJECTS

Mr. EVINS. Take a look at "other objects." This is on page 104. Travel remains the same as last year, although it is up from 2 years ago. Transportation of things remains the same. Here is an item, rents and communications, which goes down substantially. You had $194,000, then $255,000 and you are down to $58,000.

Mr. J. D. O'CONNELL. Give us credit for bringing this about.

Mr. EVINS. Did you do that or did the Bureau of the Budget?

Mr. J. D. O'CONNELL. We did this.

Mr. PLUMMER. Computer time is what it is.

Mr. EVINS. Rental of Equipment goes down from $212,000 to $25,000.

Mr. J. RAY O'CONNELL. This is where the savings are—purchasing of computer time.

Mr. EVINS. All right. Printing is $18,000. The other services is your research and contractual arrangements. They go up from $600,000 to $800,000.

Don't you think you could hold that to about $500,000, General? You let a lot of contracts.

Mr. J. D. O'CONNELL. That contract effort, Mr. Chairman, is indispensible to us. We screen each of these study requirements very carefully. It is an austere study program—down to rockbottom of what

needs to be done. The task force recognizes that certain studies must be made if it is to come up with well-founded conclusions and recommendations. We recognize the need too, not only as far as the task force is concerned, but in respect to our responsibility for determining adequate national telecommunications policy. We've actually amalgamated much of our contract money into common purposes—to meet our requirements and at the same time respond to task force requirements. In other words, we have economized to the extent we can to serve common objectives. We will continue to do this—we will continue to review very carefully our study objectives to make sure that the data which we get is data that we must have.

Mr. EVINS. Reimbursement to other agencies, $35,000. They ought to be paying you for the services you render to them, General. What is this?

Mr. J. RAY O'CONNELL. This is for administrative services.

Mr. EVINS. $35,000 is paid to other agencies?

Mr. J. RAY O'CONNELL. We reimburse OEP for administrative services which includes all the housekeeping functions, processing of personnel, procurement of supplies, etc.

UNEXPENDED BALANCE

Mr. EVINS. I think I asked you earlier if you had an unexpended balance in your contract studies.

Mr. J. RAY O'CONNELL. This is no-year money.

Mr. EVINS. How much carryover do you have?

Mr. J. RAY O'CONNELL. We do not anticipate any carry-over into fiscal year 1969.

Mr. EVINS. It is not all obligated. There is a freeze on some of it, is there not?

Mr. J. RAY O'CONNELL. No, not a freeze but some of our contract funds have not been apportioned for fiscal year 1968.

Mr. JOHNSON. We had a hearing with the Bureau of the Budget——

Mr. J. RAY O'CONNELL. Yes, they have come back and reviewed this, and have an arrangement with the BOB with respect to coordination of our research efforts with the work and requirements of the task force.

Mr. EVINS. You don't have any unexpended balance at this time?

Mr. J. RAY O'CONNELL. Let me clarify this—the BOB has coordinated the efforts of several agencies conducting contract studies in spectrum development and has held back the apportionment of $190,000 of fiscal year 1968 contract funds. Agreement has now been reached for the letting of two contracts which will obligate the balance of this year's contract funds.

Mr. EVINS. You have $190,000 in research money for contracts that you have not obligated yet?

Mr. J. RAY O'CONNELL. Yes.

Mr. EVINS. General, we are always impressed with the magnitude of your advisory capacities. You have an important mission. We commend you and wish you a lot of good luck.

Mr. J. D. O'CONNELL. Thank you, Mr. Chairman.

THURSDAY, MARCH 7, 1968.

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Agriculture	267	185	187
	2. Commerce	2,247	1,897	1,919
	3. Health, Education, and Welfare	148	97	97
	4. Housing and Urban Development	77		
	5. Interior	342	289	292
	6. Labor	518	314	317
	7. Transportation	235	205	207
	8. Treasury	72	68	68
	9 Federal Communications Commission	30		
	10. Interstate Commerce Commission	60	47	48
10	Total program costs, funded—obligations (object class 25.2)	3,996	3,102	3,135
	Financing:			
25	Unobligated balance lapsing	4		
40	New obligational authority (appropriation)	4,000	3,000	3,135
44	Proposed supplemental for civilian pay act increases		102	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	3,996	3,102	3,135
72	Obligated balance, start of year	1,152	1,206	1,021
74	Obligated balance, end of year	−1,206	−1,021	−1,147
77	Adjustments in expired accounts	−10		
90	Expenditures excluding pay increase supplemental	3,931	3,190	3,004
91	Expenditure from civilian pay act supplemental		97	5
	Expenditures are distributed as follows:			
01	Out of current authorizations	2,789	2,081	1,988
02	Out of prior authorizations	1,142	1,206	1,021

OFFICE OF EMERGENCY PLANNING

WITNESSES

ENDICOTT PEABODY, ASSISTANT DIRECTOR
WILLIAM B. RICE, DIRECTOR OF ADMINISTRATION
EUGENE J. QUINDLEN, DIRECTOR, PROGRAM PLANNING AND EVALUATION
A. JAMES READ, BUDGET OFFICER

Mr. EVINS. We will hear Governor Peabody on the civil defense and defense mobilization function for OEP.

Mr. PEABODY. And then the delegate agencies will all testify in turn alphabetically in accordance with your wishes.

Mr. EVINS. We had Governor Daniel with us the other day and he did an excellent job. We will place Governor Daniel's statement in the record.

Mr. PEABODY. That is the statement I was going to present for him.

Mr. EVINS. We will be pleased to hear you.

GENERAL STATEMENT

Mr. PEABODY. I am particularly interested, as the Assistant Director of the Office of Emergency Planning in the delegate agency budget because I have been appointed by the Director, Governor Daniel, to serve as Chairman of the Interagency Emergency Planning Committee.

We work with these committees month by month, working out emergency programs and making sure that our program is up to date.

This committee, Mr. Chairman, is a very effective working tool in drawing together all of the emergency activities in all of the departments of government, and we are working extremely hard to better its operation so it will be up to the minute in every way possible.

As you well know, Mr. Chairman, agency programs are not individual, unrelated, nor uncoordinated pieces. They are an important part of the continuing Federal effort to build emergency preparedness into the existing structure of government. The objectives set forth are part of a total program designed to move nonmilitary preparedness forward rationally, uniformly, and with maximum benefit for every dollar invested.

OEP provides the departments and agencies, including the eight represented here, with overall assumptions, policy guidance, program assistance, and coordination. However, the departments and agencies carry out the detailed work of preparedness in their own areas of competence. OEP has worked with the agencies in establishing these defense mobilization goals and programs and funding levels.

The total request for the eight agencies has been held to the fiscal year 1968 level of funding except for a very slight increase due to the pay raise. This request is down more than 21 percent from the actual obligations for 1967. I believe that this appropriation request merits your favorable consideration.

Mr. EVINS. Very nice statement, Mr. Director.

We think, in view of continuity and order, we ought to hear the Department of Health, Education, and Welfare, and have it together.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

WITNESSES

DEAN SNYDER, DEFENSE COORDINATOR, OFFICE OF THE SECRETARY

CHARLES F. KEARNEY, DIVISION OF FINANCIAL MANAGEMENT, OFFICE OF THE SECRETARY

Mr. EVINS. We have Dean Snyder, Defense Coordinator, Office of the Secretary, and Mr. Charles F. Kearney, Division of Financial Management, Office of the Secretary.

Gentlemen, it is nice to see you and we will be pleased to hear you.

GENERAL STATEMENT

Mr. SNYDER. Mr. Chairman and members, I have had the pleasure of being before you in other years and I know you like short statements. So I will just file my written one, which runs to about two pages, and maybe I can be even briefer than that.

Mr. EVINS. You take your time and tell us your needs, Doctor.

(The statement follows:)

STATEMENT OF DEAN SNYDER, DEFENSE COORDINATOR, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Mr. Chairman and Members of the Committee:

I am pleased to appear for the Department of Health, Education, and Welfare to discuss that portion of the Office of Emergency Planning budget estimates which relates to our continuing role in defense readiness for fiscal year 1969. The amount of the request is $97,000. This is the same level of funding as allocated to us by OEP for the current fiscal year. The Department also receives funds for emergency health activities and the emergency medical stockpile but these activities are covered in a separate justification.

The Secretary is required by three Executive orders to develop and coordinate a series of readiness measures available for operational use in an emergency. These include emergency health and emergency welfare measures as defined in considerable detail in Executive Order 11001 and 10958, plus the capability to conduct emergency operations from headquarters and regional relocation sites as required by Executive Order 10346. In maintaining its defense posture the Department consults and works closely with both the Office of Emergency Planning and the Office of Civil Defense on a wide range of preparedness activities.

The estimate before you provides a minimum staff of six positions and $97,000 to support the Secretary in fulfilling this mission. The staff works under the general direction of the Assistant Secretary for Administration who is the focal point in the Department for development, maintenance, and testing of DHEW emergency readiness plans. In carrying forward civil defense and mobilization functions, the Secretary subdelegates defense assignments as much as possible to the heads of operating agencies and to the Department's regional directors. However, the ultimate responsibility resides in the Office of the Secretary.

It should be specially mentioned that under postattack emergency conditions the regional boundaries of the Department would become coterminous with those of OEP and OCD in order that the States could deal with one central point in each regional area. Regional offices participate in periodic test exercises with OEP and OCD, and, in addition, provide assistance and services in natural disasters.

The function of staff support for the Secretary is a continuing one as part of the Government's total nonmilitary readiness effort. The funds requested for allocation through OEP are not duplicated in any of the Department's regular appropriation structure.

I will be glad to respond to any questions.

Mr. SNYDER. This request is for the same amount as last year. There is no increase in either funds or personnel and we intend to proceed on the same level as before.

The purpose of the request is to provide staff support for the Secretary of Health, Education, and Welfare, which experience shows is necessary to undertake the readiness assignments that have been made to the Secretary in three Executive orders. These Executive orders contain 34 separate assignments. All of the Department's operating agencies and regional offices are involved in these.

DEFENSE ROLE OF SECRETARY'S OFFICE

The Secretary must coordinate, review, and evaluate the Department's readiness, and provide the channel for dealing with the Office of Emergency Planning and the Office of Civil Defense, and we look to these agencies for additional support and guidance.

Let me take just one example.

The Department is required by Executive Order 10346 to have a system for the continuity of its operation on a streamlined basis in time of emergency. This involves relocation sites in constant readiness, both headquarters and in the regions. High level officials of the

Department are relocatees. These must be knowledgeable. Classified matters are involved. Top people change and new people come on board.

During 1967, for example, we conducted seven out-of-town orientation sessions involving 178 of these top level people for this purpose. and numerous other examples could be cited, some of which are in the justification material, but perhaps I might stop now for questioning.

In summary, the staff support function in the Secretary's office is a continuing one. It is on a maintenance basis. Our request does not duplicate any of the Department's regular work and we would propose to operate next year at the same level as this year.

Mr. EVINS. A very good statement.

You support the Secretary, and you want to continue at the same level.

Mr. SNYDER. Yes.

Mr. EVINS. I think you have made an excellent statement.

You have six jobs and $97,000, the same as last year?

Mr. SNYDER. That is right.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record the justification which appears on pages 36 through 40.

(The pages follow:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES, FISCAL YEAR 1969

STATEMENT OF MISSION

The defense readiness objective of the Department of Health, Education, and Welfare is to fulfill Presidential assignments made to the Secretary in Executive Orders 10346, 10958, and 11001. These assignments include the requirement, under postattack conditions, to operate and maintain the Department's organization and essential functions, and to conduct emergency programs—in particular, emergency health services and emergency welfare services as defined by Executive Order 11001.

Preparedness assignments are redelegated to heads of DHEW operating agencies wherever possible. The Secretary's office monitors these assignments and is the focal point for the coordination and direction of all readiness measures throughout the Department, including regional offices. Readiness measures also include management of relocation sites and the conduct of periodic exercises to test readiness capability.

STAFF SUPPORT FOR THE SECRETARY

With respect to continuing functions in the Secretary's office, for which this estimate is the 1969 request, the following is a summary:

Basic responsibility.—Serve as the one focal point in the Department for development and maintenance of DHEW emergency readiness plans. This includes:

1. Develop readiness plans under Executive Order 11001 to comply with following assignment: "The Secretary shall be prepared to implement all appropriate plans developed under this order." Example: Coterminous regional boundaries with OEP/OCD in the postattack period.
2. Keep operating agencies informed of overall policy and guideline materials and all other significant nonmilitary developments affecting their emergency readiness; provide a means for frequent consultation with op-

erating agencies to insure departmental consistency; and maintain DHEW emergency documents, manuals, and field issuances.

3. Participate with and provide support to staff of the Office of Emergency Planning, Office of Civil Defense, and other Federal counterparts in interagency planning and systems development for defense readiness and in the review of documents related thereto.

4. Supervise cadre and maintain current readiness at two DHEW headquarters relocation sites for emergency continuity of departmental operations, maintain cadre lists, and conduct orientation and training seminars at both sites for key DHEW officials with a need to know.

5. Prepare plans and direct test exercises involving both headquarters and field.

6. Develop and monitor damage assessment systems under Executive Order 11001 which requires DHEW to "maintain a capability to assess effects of attack on health, welfare, and education facilities and personnel, both at national and field levels, and provide data to the Department of Defense." Participate also in the work of the OEP National Resource Analysis Center.

7. Perform security functions involving the handling of classified material related to defense readiness in accordance with Executive Order 10501, and prepare defense-related reports and correspondence which frequently are of a classified nature.

8. Maintain a civil defense shelter and survival plan for DHEW employees in all headquarters buildings; recruit and train the self-protection (warden) organization; supervise building evacuation drills, maintain inventory and surveillance of all civil defense survival supplies stored in DHEW buildings.

9. Provide logistical support for a DHEW classified site in an out-of-town location (e.g., stocking of emergency rations and medical supplies, maintenance of communication equipment, training of communicators, etc.); maintain an emergency control center for use by Secretary and top staff in headquarters building.

FISCAL YEAR 1969 REQUEST

The fiscal year 1969 request of $97,000 and six positions is identical with the fiscal year 1968 level and provides only for maintaining a focal point for emergency preparedness in the Office of the Secretary.

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES

FINANCIAL AND PERSONNEL SUMMARY

	1967 actual		1968 estimate		1969 estimate	
	Yearend employment	Obligations	Yearend employment	Obligations	Yearend employment	Obligations
Obligations and employment by activity:						
Emergency welfare services[1]		34,000				
Regional defense readiness	3	84,552				
Staff support for the Secretary	6	92,364	6	97,000	6	97,000
Total	9	[2]210,916	6	97,000	6	97,000
Obligations by object class:						
11 Personnel compensation	9	179,764	6	85,000	6	85,000
12 Personnel benefits		12,962		7,000		7,000
21 Travel and transportation of persons		4,086		1,700		1,700
22 Transportation of things						
23 Rent, communications, and utilities		3,251		2,200		2,200
24 Printing and reproduction		140		200		200
25 Other services		7,196		500		500
26 Supplies and materials		2,451		400		400
31 Equipment		1,066				
Total	9	[2]210,916	6	97,000	6	97,000

[1] The activities of EWS were suspended in the 2d quarter of fiscal year 1967 after funds from OEP were terminated in the fall of 1966.

[2] Includes $62,231 transferred to HEW from Office of Civil Defense.

Note: Fiscal year 1968 includes 1967 pay increase of $4,000, effective Oct. 1, 1967.

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES

SUMMARY OF ACTIVITY STAFF SUPPORT FOR THE SECRETARY

	1967 actual	1968 estimate	1969 estimate
Obligations by object class:			
11 Personnel compensation	$74,891	$85,000	$85,000
12 Personnel benefits	5,473	7,000	7,000
21 Travel and transportation of persons	1,146	1,700	1,700
22 Transportation of things			
23 Rent, communications, and utilities	2,388	2,200	2,200
24 Printing and reproduction	136	200	200
25 Other services	5,956	500	500
26 Supplies and materials	1,308	400	400
31 Equipment	1,066		
Total obligations	[1] 92,364	97,000	97,000
Year end employment	6	6	6
Average employment	5	5	5

[1] Includes $62,231 transferred to HEW from Office of Civil Defense.

BASIC RESPONSIBILITIES

Mr. EVINS. Mr. Snyder, you outline about nine functions you support the Secretary with: developing readiness plans, keeping operating agencies informed of overall policy, participating with OEP, Civil Defense, and others in interagency planning, and you supervise the cadre and maintain current readiness for two DHEW relocation sites. You prepare plans and direct test exercises. Develop and monitor damage assessment systems.

We have not had any of that yet and hope we will not have.

You perform security functions. What do you do in this area?

Mr. SNYDER. What we mean there, sir, is the maintenance and custody of security files. We keep the Secretary's files in this general area of defense readiness. It involves about 600 to 700 log entries each year by one of the people on my staff. This is not investigation or anything of that sort.

Mr. EVINS. You maintain civil defense shelters. I thought GSA and the Office of Civil Defense did this.

Mr. SNYDER. In this area we have our own responsibilities for the buildings that house our people. The headquarters complex we occupy involves about 6,000 personnel with additional shelter space for 85,000 of the general public. We are required to maintain the self-protection system for our own employees at headquarters. It is a continuing responsibility. We have had it for a long time. It involves some 800 wardens who are trained by periodic exercises within our own building complex. It deals with storage of rations, water, and medical supplies for the relocatees who would be in these buildings in the event they would have to take shelter. Matters such as that.

Mr. EVINS. You provide logistical support for the Department of Health, Education, and Welfare classified site in an out of town location, and you maintain an emergency control center for use of the Secretary and top staff headquarters building facilities.

You have a lot of important functions and do not have very many personnel. We commend you for your important mission and wish you good luck, Doctor.

Department of Commerce

WITNESSES

ANTHONY A. BERTSCH, ASSISTANT ADMINISTRATOR FOR INDUSTRIAL MOBILIZATION, BUSINESS AND DEFENSE SERVICES ADMINISTRATION
JOHN F. LUKENS, DIRECTOR, OFFICE OF EMERGENCY READINESS
ROBERT SCHELLER, CENSUS REPRESENTATIVE TO NRAC
WILLIAM WILSON, BUDGET OFFICER

Mr. Evins. Let us take the Department of Commerce representatives next.

We have with us our old and esteemed friend, Anthony Bertsch, Assistant Administrator for Industrial Mobilization, better known as Col. Tony Bertsch, a very efficient, capable administrator. We will be pleased to hear you.

General Statement

Mr. Bertsch. Thank you, Mr. Chairman. I have a prepared statement which, with your permission, I would like to insert in the record, and if I could abbreviate a statement.

Mr. Evins. The full statement may be included in the record.

(The statement follows:)

Statement of A. A. Bertsch, Assistant Administrator for Industrial Mobilization, Business and Defense Services Administration, Department of Commerce

Mr. Chairman and members of the committee, I am happy to have the opportunity to inform the subcommittee about the Industrial Mobilization activities of the Department of Commerce under the Defense Production Act. For about 3 years, our country has been involved in a major military engagement. The number of our troops in South Vietnam is greater now than it was a year ago and it is higher than the number deployed in the Korean emergency. Our military expenditures have increased appreciably and our defense requirements are having a noticeable impact on many areas of the civilian economy. Despite the heavy defense effort, the Government has succeeded in avoiding the imposition of production controls on the civilian economy through our careful administration of the priorities and allocations powers of the President under the Defense Production Act to insure the fulfillment of military needs for munitions, equipment and supplies on schedule.

At the same time, Commerce is responsible for developing plans for the management of industrial production resources to meet the needs of any kind of national emergency, including nuclear attack. Both of these responsibilities have been carried on for a number of years. However, during the past 3 years, greater emphasis and attention have been focused on the needs in support of our engagement in South Vietnam. Despite the substantial extent of our involvement in Southeast Asia, and the increased rate of military procurement, we have been able to apply the experience gained from past emergencies and our planning endeavors to provide the necessary flow of materials, components, equipment, and supplies for defense without major disruptions in our national production effort.

The impact of increased military procurement has occasioned many production bottlenecks, delivery delays, and tight supply situations. We have met and solved these problems with the timely use of directive actions and, in numerous instances, have scheduled the entire order boards of companies so as to assure maximum assistance to our defense needs. On the other hand, the prolonged strike in the copper industry has had a serious impact on the normal patterns of distribution within the industry and on their inventory practices. It has also sharply affected the industry's price structure. We are still experiencing a tight supply situation with respect to nickel and for certain types of herbicides.

However, the exercise of existing priorities authority has permitted us to assure the preferential status of defense procurement on a continuing basis, and the defense materials system and priorities have proved to be sufficiently flexible to meet unexpected contingencies as they have occurred. We shall, of course, continue our appraisal of the system in the light of increased procurement levels and and our national industrial capability.

Despite the fact that our major emphasis has been directed to the fulfillment of requirements for the situation in Vietnam, we have continued, although in a lesser measure, our planning for an even greater contingency which includes the possibility of a nuclear attack upon the continental United States. Our planning for such an emergency contemplates the decentralization of survival efforts and resource management to assure the continuity of Federal authority in the event of a break in communications with, or the temporary inoperability of, national headquarters operations. In such an event, operational authority would be delegated to regional and field offices of BDSA, whose staffs would be augmented by our executive reserve complement which we continue to train through area and local training and orientation sessions, and through the medium of training bulletins. These regional and field staffs would have the benefit of prepositioned industrial and economic data developed, in large part, through our Industry Evaluation Board activities. In the past 2 years, we have placed increasing emphasis in training executive reservists in the functions they might be requested to perform.

We are continuing our stockpile activities, which represent a substantial part of our industrial mobilization responsibilities.

For the industrial mobilization functions of the Department of Commerce in fiscal year 1969, we are requesting funds in the amount of $1,919,000. BDSA is requesting $1,838,000. This is an increase of $158,000 over the fiscal year 1968 allowance. This increase constitutes pay act and other built-in adjustments. There are no program increases requested. The estimates for the Bureau of Census amount to $81,000, a decrease of $10,000 from the fiscal year 1968 allowance.

Administration of the defense materials system

The administration of the priorities and allocations powers under the Defense Production Act of 1950, as amended, is accomplished by the Business and Defense Services Administration with respect to production for national defense, through the operation of the defense materials system and priorities.

As I have indicated, we have up to this time found the system to be effective in supporting the timely fulfillment of defense needs. Since March 30, 1966, BDSA in cooperation with the Department of Defense, has conducted 60 briefing sessions for businessmen covering the operation of the defense materials system and priorities. Nearly 30,000 businessmen have attended these conferences, and they have acquired effective understanding of operations under this system.

That these conferences have accomplished their purpose is reflected by the reduction in the number of special assistance or expediting actions that BDSA has been called upon to provide in behalf of defense contractors or defense agencies during the first 7 months of fiscal year 1968. Special assistance actions are occasioned when conflicting demands, limited facilities, production bottlenecks, and other delays adversely affect defense contract production and delivery schedules. In such cases, BDSA provides expediting assistance to contractors or defense agencies involved through the use of special priorities or directives to improve deliveries, or through the scheduling of production and deliveries. The number of such actions was 3,756 in fiscal year 1966, 8,185 in fiscal year 1967, and 2,255 during the first 7 months of fiscal year 1968. There is no assurance that the special assistance caseload will not increase to a level approximating that of fiscal year 1966. However, we feel that our DMS conference training program has successfully accomplished its desired objective in making defense contractors more aware of their responsibilities under the system. We shall continue to conduct such conferences as the need is demonstrated.

Our administration of the Defense Production Act authorities under Executive Order 10480, and the industrial mobilization planning functions carried out under Executive Order 10999, are under the continued observation of the Joint Committee on Defense Production, to which we submit quarterly reports and an annual report.

Stockpile activities

Under Executive order and by statutory authority, BDSA also has responsibility for providing advice and counsel on stockpile matters to the Office of Emer-

gency Planning. This includes stockpile specifications, storage procedures, estimates of national essential mobilization requirements, availability of domestic materials to fulfill national programs, industrial technology, and related matters. The principal development in the stockpiling program by BDSA thus far during fiscal year 1968, was the initiation of a comprehensive review of mobilization requirements for all materials in the national stockpile. In addition, BDSA prepares special studies for OEP bearing on stockpile problems and carries our assignments related to the operation of the stockpile. We continually consult with industry to obtain its views on all stockpile matters.

Industry Evaluation Board activities

Executive Order 10421 delegates to the Secretary of Commerce the responsibility for the identification of those products and services and supporting facilites which are of exceptional importance to national security. The Industry Evaluation Board is an interagency committee whose chairman is a member of the BDSA mobilization staff. Detailed studies concerning those industries and facilities vital to the national security are made under the supervision of the Board Chairman, and provide significant data concerning production capabilities and availabilities for decision making.

National Defense Executive Reserve

Essential to a system of expanded industrial activity to meet emergency needs under war condition is the requirement of a corps of trained executives from the business community who stand ready to perform emergency responsibilities assigned to BDSA. Under a program authorized by the Congress we have recruited 1,435 executives of the 3,000 we believe necessary to staff the production unit of the National Defense Executive Reserve. These executives are available for duty assignments both at headquarters and in the field. The reservists are given training through work conferences conducted by members of the BDSA staff to prepare reservists to carry out their assigned emergency functions.

Bureau of the Census—Delegate agencies budget

The Bureau of the Census provides basic statistical services for defense mobilization. These services include collecting and compiling data through new surveys, special tabulations and analysis of data already collected.

The Bureau is one of the most important suppliers of basic information to the National Resources Analysis Center (NRAC). It collects and tabulates special data in addition to statistical information provided in the course of its regular work. The technical staff of the Bureau acts in an advisory capacity to NRAC in the full use of Census data and facilities.

During fiscal year 1968, the Bureau made available to NRAC current industrial establishment data and detailed agricultural data in support of the NRAC mission. In fiscal year 1969 the Census Bureau will again provide current industrial plant data and will begin preparing for extraction of information from the 1967 Economic Census for use at NRAC.

I shall be pleased to answer any questions you may have in connection with thees programs of Commerce.

APPROPRIATION REQUEST

Mr. BERTSCH. We are asking this year for no program increases, but a continuation of the program that was requested last year plus of course, the pay raise and other built-in charges.

Our job, as you know, Mr. Chairman and members of the committee, is primarily, at this time, the administration of the Defense Production Act through a series of priorities. This is the defense materials system. We support the defense effort through a mandatory system of priorities.

Our defense materials system sets aside each quarter a certain quantity of steel, copper, and aluminum and nickel. We handle bottlenecks by allocating materials between the various defense establishment contractors through a series of special assistance cases. Incidentally, this year, the number of these cases has diminished somewhat. We be-

lieve, this was result of a long-term educational campaign that we engaged in beginning March 30, 1966.

If the war in Vietnam maintains its present pace and the requirements for that war are maintained at roughly the current level, we expect no diminution of our work.

Mr. TALCOTT. All of the indications are that the war effort is going to be increased. You must be clued in on that.

Mr. BERTSCH. We are clued in so far as the potential increases concerned, but there has been no affirmation of increases, if any, either in manpower or in materials for the Department of Defense.

Mr. TALCOTT. How can you plan when you are so much in the dark. You must know in your own mind that there is going to be an increase in mobilization, which means an increase in everything, and yet you go on planning at the same rate.

Mr. BERTSCH. No, as a matter of fact, we do not. Our planning activities encompass the possibility of increased military procurement. However, for the purposes of this justification we were not in a position to request any additional funds or to anticipate any additional work because of those increases. Although they may very well occur.

Mr. TALCOTT. Does that mean you will be back for some sort of a supplemental increase when you finally receive the official word that we are increasing our mobilization?

Mr. BERTSCH. It depends upon the size of the increase as to whether or not it will be necessary for us to return for additional funds, although we do not rule out that possibility.

Mr. TALCOTT. Thank you.

Mr. EVINS. Mr. Bertsch, you had an appropriation for 1968 of $1,897,000 and 115 jobs.

Mr. BERTSCH. Yes, sir. The 115 jobs represent the year-end employment of the Department.

Mr. EVINS. In 1969, you are asking for $1,919,000 and 117 jobs, which is a $22,000 increase, and two positions.

Mr. BERTSCH. Yes, sir.

Mr. EVINS. Proceed.

PREPAREDNESS RESPONSIBILITIES

Mr. BERTSCH. In addition, of course, to our administration of the Defense Production Act, which is done with the policy guidance of the OEP, we continue our preparation for any increase in activity, as the Congressman has pointed out, through a variety of activities, not the least of which is our executive reserve program. BDSA has the largest component of the national defense executive reserve. We try to train them for all kinds of emergencies—not only conventional but nuclear emergencies.

This training program is done on a rather comprehensive scale.

In addition, we act as advisors to the OEP and other Government agencies on stockpile activities. This is done, not only in connection with the recommendations for conventional or nuclear war requirements, but also with respect to specifications, storage procedures, and the like.

Additional mobilization programs I think are outlined in the statement that was submitted to the committee.

Mr. EVINS. This is a very interesting statement and it contains a lot of information.

The Business and Defense Services Administration has four major defense objectives under congressional mandate and executive order.

First, you have responsibility for the administration of the current system of priorities and allocations.

This relates to military, atomic energy, and space programs pursuant to the Defense Production Act of 1950.

Your second major function is to conduct mobilization programs to assure the readiness of the production resources of the Nation to meet needs created by any emergency, including a nuclear attack. That is a big order to be ready and prepared.

Number three is, pursuant to Defense Production Act amendments of 1955 and Executive Order 11179, to develop and administer programs for recruitment, assignment, and training of a corps of national defense executive reservists.

In a moment I want you to tell us the number of these.

And the fourth is assisting the OEP in formulating and carrying out plans for stockpiling of strategic and critical materials. Those are your four major missions.

JUSTIFICATION MATERIAL

We will place in the record pages 15 through 22.

(The pages follow:)

DEPARTMENT OF COMMERCE

BUSINESS AND DEFENSE SERVICES ADMINISTRATION—CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES

STATEMENT OF MISSION

The Business and Defense Services Administration has four major defense and preparedness objectives under congressional mandate and executive order. First: It is responsible for the administration of a current system of priorities and allocations designed to assure the timely completion of current military, atomic energy, and space programs for production, construction and research and development. This activity is carried out pursuant to title I of the Defense Production Act of 1950, as amended, and Executive Order 10480. Second: It conducts mobilization programs to assure the readiness of the production resources of the Nation to meet needs created by any type of national emergency, including nuclear attack. These responsibilities are carried out under Executive Order 10999. BDSA would also, after appropriate Presidential determination, allocate materials in the civilian market should certain specified conditions arise relating to the serious disruption of the economy resulting from defense procurement. Third: Pursuant to the Defense Production Act amendments of 1955 and Executive Order 11179, it develops and administers programs for the recruitment, assignment and training of a corps of national defense executive reservists consisting of business executives and professional men who would staff an emergency production agency in case of need. Fourth: It is responsible for assisting the Office of Emergency Planning in formulating and carrying out plans for stockpiling of strategic and critical materials pursuant to Executive Order 10999.

CURRENT STATUS

The accomplishments under the objectives established for fiscal year 1967 are presented below:

1. Priorities and allocations

(*a*) The priorities and allocations authority administered by BDSA under a delegation from the Secretary of Commerce, through the defense materials system and priorities is designed to assure that national defense requirements are

met on schedule. The simplicity of the present priorities system, limited as it now is to national security programs as compared with the system of industrial controls which were imposed on the entire industrial economy in World War II and Korea, does not diminish the need for maintaining the continuing balance between military and civilian needs. A continuous process of assessment as well as a need for responsiveness to changing industrial situations is essential to support defense programs. This process is accomplished by the accumulation of facts and the analysis of industrial intelligence.

BDSA has negotiated a contract with a private research firm to prepare estimates of the consumption of controlled materials, by forms and shapes, as well as the consumption of other critical materials, in 1965 by all SIC 5-digit and selected 7-digit manufacturing industries and in 25 categories of construction. Value of shipments is to be obtained on an industry basis and ratios of materials usage per $1 million of shipments for each material surveyed are to be provided.

(*b*) *The defense materials system and priorities.*—During fiscal year 1966 BDSA conducted 30 conferences throughout the country for the purpose of informing the business community of the operations of the defense materials system and priorities. Upon completion of this series of conferences, BDSA prepared a booklet entitled "Questions and Answers—The Defense Materials System and Priorities". A second series of 30 such conferences was held in fiscal year 1967. Some 24,265 businessmen attended both of these conferences, 18,594 in fiscal year 1966 and 5,671 in fiscal year 1967.

BDSA Order, M-11A, copper and copper-base alloys, contains the rules applicable to producers of copper controlled materials and copper distributors under the defense materials system. This order was completely revised effective October 28, 1966. The major changes in the revised order were made to update the rules to bring them in conformity with the basic rules contained in DMS regulation 1 and with current industry practices.

The set-asides for copper-controlled materials were increased on August 15, 1966, and December 2, 1966, as a result of increased military requirements. Another revision of these set-asides was issued on May 15, 1967, reflecting both increases and decreases in several of the copper-controlled material items. These set-aside changes for copper-controlled materials were issued by BDSA in revisions of schedule A to BDSA order M–11A on the dates indicated. On December 2, 1966, the set-aside for ammunition strip was increased from 26 percent for the fourth quarter of 1966, to 27 percent beginning with the first quarter of 1967. On May 15, 1967, this set-aside was reduced to 25 percent beginning with the third quarter of 1967. These changes were accomplished by amendments to direction 1 to BDSA order M–11A on the dates indicated. The set-aside for domestic refined copper was increased from 18 percent in the fourth quarter of 1966, to 26 percent in the first quarter of 1967, based on average monthly production during 1965. The set-aside for domestic refined copper for the second quarter of 1967 was increased to 29 percent and reduced to 26 percent beginning with the third quarter of 1967. These changes were accomplished by amendments to direction 2 to BDSA order M–11A.

The aluminum set-aside for each quarter during fiscal year 1967 was maintained at 300 million pounds, representing approximately 13 percent of total industry shipments during each quarter, as compared to 8.5 percent during fiscal year 1966.

The defense set-asides for steel-controlled materials for the fourth quarter of 1966 were set at 1,440,335 net tons, representing about 6 percent of total industry shipments anticipated for that quarter. Subsequent set-asides of steel mill products for the balance of fiscal year 1967 ranged between 5.5 and 6 percent of anticipated industry shipments.

A nickel shortage was created during the third quarter of 1966 by a strike affecting the major production facilities of the chief source of U.S. supply of primary nickel. BDSA established a set-aside of primary nickel for defense needs in an amount equal to 25 percent of average monthly deliveries of U.S. suppliers during the first 6 months of 1966. The initial set-aside was effective for the month of August 1966, and applied to the three U.S. suppliers. The set-asides have been imposed from month to month until Canadian production, the primary source of U.S. nickel, returns to normal. The demand for nickel both by defense and nondefense consumers continues at a high level.

A total of 8,185 special assistance and authorization cases was processed during fiscal year 1967, as compared to 3,756 such cases for the preceding year.

Of this number, 5,178 special assistance (expediting) actions were processed and 3,007 authorizations, including production and allocation directives, were processed. This increase reflects the high rate of military procurement and acceleration of deliveries by defense contractors and their suppliers.

2. Emergency readiness planning

a. Executive Reserve Program

(1) Twenty-six conferences of BDSA executive reservists were held, attended by 806 persons, of which 511 were reservists and 295 were Government officials, and business and civic leaders. These conferences included 1-day meetings with seminars and problem sessions attended by BDSA officials who conducted briefing sessions. Plans were made for the fifth national training conference to be conducted in Washington in October 1967.

(2) Total executive reserve enrollment at the beginning of the year was 1,389. The yearend total was 1,435, notwithstanding loss of 15 reservists by attrition. Applications of an additional 207 candidates were in varying stages of processing at yearend.

(3) BDSA prepared a new executive reserve directory which will be issued at the fifth national training conference. This directory for the first time is coded to the BDSA data processing system to identify reservists by field office, regional or national assignments, and by industry division or office affiliation and by type of appointment.

(4) Four executive reserve information bulletins, entitled "Executive Reservist," were sent to the members. In addition, four orientation and training bulletins were given the reservists to provide technical training materials as distinguished from informational material of a transitory nature.

(5) The program to modify the boundaries of Department of Commerce field offices for mobilization purposes was completed, and the boundaries for such purposes now coincide with OEP–OCD regional boundaries. This eliminates conflicts of jurisdiction and responsibility under war conditions which would require activation of executive reservists holding field office assignments.

(6) The executive reserve manual is being revised and updated to eliminate and replace obsolete material.

(7) The executive reserve manpower requirements and recruitment plan has been completed. Under this program, BDSA Industry Divisions systematically determine the number of reservists needed to staff each field office, region, and the national headquartes of an emergency production agency for all the major four-digit SIC industries (or some other product categories) for which each BDSA Industry Division is responsible. This new program emphasizes a balanced staffing pattern for the entire emergency production agency, and in addition to production executives, includes administrative, labor representatives, transportation liaison, economists statisticians, educational compliance, and other professional types of individuals.

b. Stockpile and Supply Requirements

(1) *Stockpile activities.*—

Requirements analyses of stockpile materials for nuclear or conventional war	87
Stockpile disposal program analyses and recommendations	21
Purchase and acceptance specifications	10
Special instructions	10
High-heat alloy and special-property materials requirements	18
Special stockpile studies	13

The above activities required formal or informal discussions with industry regarding technical aspects, industry practices, and trends in usage. Such discussions amounted to several hundred during the year.

(2) *Section 232 cases.*—The BDSA report, with recommendations, on watches was sent to OEP.

c. Industrial Evaluation Studies

(1) *Industry Evaluation Board activities.*—Analyses of 175 essential products or industrial segments were completed during the year.

(2) *Vertical analysis studies.*—Methodology and applications of techniques were completed which enable the measurement, preattack, of industrial capability to produce any selected products after a nuclear attack upon the United States. The Office of Emergency Transportation has requested of BDSA studies measuring the probability of postattack national capability to produce transportation and auxiliary equipment for the common modes of transportation.

(3) *Supply-requirements study for nuclear war and reconstruction.*—In fiscal year 1966, the Office of Emergency Planning provided BDSA with an economic model for the first 3 years following a nuclear attack. The first postattack year was subdivided into the first quarter, second quarter, and second half year. During the fiscal year under review, estimates were developed for the quantities of 13 forms of controlled materials which would be required to permit production at an economic level defined by a postnuclear attack economic model prepared by the Office of Emergency Planning. This model is constructed of 88 sectors and divided into five time periods. Subsequent estimates of stockpile item requirements were correlated with those for the 13 forms of controlled materials.

As the BDSA, or its wartime successor agency, would be a claimant for transportation services in postattack survival and recovery periods, the Office of Emergency Transportation requested the BDSA to prepare fairly detailed estimates of the transportation requirements, involved in the above mentioned OEP postattack economic model, to move the quantities of commodities for which the BDSA is responsible. These transportation requirements were broken down for the five time periods of the model for each industrial sector and by the six common modes of transportation (rail, motor, air, inland water, Great Lakes, and coastwise).

Satisfied with the methods developed to gage transportation requirements postattack, the Office of Emergency Transportation requested of BDSA a similar set of estimates for a 3-year period of mobilization under conditions of conventional warfare. Like the postattack estimates, these estimates were also designed to satisfy production levels defined by an economic model for conventional warfare prepared by the OEP.

(4) *National Resource Analysis Center support.*—BDSA is the chief source of production capacity information for the National Resource Analysis Center data bank of information on industries essential to the national defense and security for both conventional war and postattack survival and recovery. BDSA abstracts from IEB analyses plant production capacity data, applies appropriate codings and geographic coordinates for each plant listed, and submits to the NRAC decks of cards, punched in the format it has prescribed, for transferring the information directly to magnetic tape. Similar treatment was given to the data obtained through surveys of selected survival items.

d. Essential survival items

Survival item surveys were completed by BDSA and final review of the results was made of: anesthetics, inhalation, intravenous, and local; ceramics, electrical, and electronic; circuit breakers, outdoor power type; chlorine; copper and aluminum electrical conductors; dry cell batteries; eating utensils, disposable; insulin and oral antidiabetic agents; rubber and plastic footwear; soda ash; surgeons needles; surgical dressings, sponges; trenching equipment. Surveys were conducted and analyses were in process on: Antimalarials, eight types; nonnarcotic analgesics and hypnotics, 21 types.

e. Relocation activities problem exercises

(1) *Mobilization readiness within BDSA.*—The BDSA emergency cadre for relocation of agency personnel in an emergency situation was expanded. The BDSA cadre program was tested by participating in exercise Blue Bell. Results were satisfactory.

(2) *Emergency data centers.*—Shipments of additional and replacement material for the emergency data centers are normally made semiannually. During fiscal year 1967, the necessary data were provided in two shipments.

(3) *Planning with commerce field offices.*—During the year BDSA was in the process of upgrading those relocation sites which had been determined to not be strictly adequate by the standards developed for measuring such adequacy.

f. Comprehensive programs

Guidance was provided a number of State production task groups during the year. The draft production plans of 29 States were reviewed and comments thereon submitted to the Office of Emergency Planning.

g. Industrial defense program

Pursuant to section 6(a) of Executive Order 10999, and under arrangement with the Office of Civil Defense of the Department of Defense, BDSA continued the program it had initiated to develop (or refine), publish and disseminate defense planning manuals and informational brochures. During the year, BDSA was actively engaged in the preparation of seven manuals and four brochures.

PROGRAM PLANS FOR FISCAL YEAR 1968 AND PROGRAM OBJECTIVES FOR FISCAL YEAR 1969

1. Support the current war effort in Vietnam through the continued and expanded administration of the defense materials system and priorities under the Defense Production Act, including special assistance (expediting), set-asides, production directives, production scheduling, and education, compliance and enforcement. Continue the modification and refinement of DMS to provide for priorities, allocations, regulation of production and the distribution of materials during expanded emergency situations, and to provide for execution of priorities and allocation activities at all levels of government. Include required emergency measures.

(*a*) Revise and issue regulations and orders relating to priorities and allocations as required.

(*b*) Conduct educational and compliance activities through DMS conferences, surveys, investigations and audits; prepare and issue publications as required.

(*c*) Update standby BDSA emergency regulations as required.

2. Assist OEP in stockpile activities by:

(*a*) Preparing or updating of requirements analyses of stockpile materials for nuclear or conventional war;

(*b*) Determining the economic and industrial impact of the stockpile disposal program;

(*c*) Reviewing and preparing purchase and acceptance specifications;

(*d*) Reviews of supply-demand situation for high-heat and special property materials;

(*e*) Preparing special stockpile studies.

3. Recruit and orient additional executive reservists to achieve an ultimate goal of 3,000; continue and expand local, regional and national training programs for executive reservists.

4. Provide the Interagency Survival Items Committee and its task groups with industrial and technological knowledge required in the determination as to what commodities are essential in a postattack period. Prepare required production and supply studies of essential survival items.

5. Maintain activities of the Industry Evaluation Board.

6. Revise and update BDSA emergency operating plans including plans for regional and field operations in an emergency.

7. Continue maintenance of emergency data centers and expand relocation of records to the extent desirable and possible.

8. Continue planning with Commerce field offices, and study possibilities of assigning personnel to State emergency relocation sites.

9. Collaborate with OEP in development of plans for industrial readiness and industrial defense currently supported solely by OCD so that major industries and corporations thereof may be cognizant of what Federal Government is doing and what should be expected of industry in an emergency.

10. Supply the OEP library, for automatic data processing activities, with production and capacity information required for industrial damage assessment and resource evaluation.

11. Provide support to the OEP State and local program through:

(*a*) Participation by field or national office personnel with the State and local planning groups as required;

(*b*) Review of the final product submitted for approval to OEP in fulfillment of programs between OEP and the States;

(*c*) Respond to requests from OEP national office, regional directors, States, and local authorities.

12. Continue support of the National Resource Evaluatoin Center; assign a member of the BDSA staff to maintain liaison with the NREC staff to establish appropriate basis for cooperative effort.

Mr. EVINS. Under your priorities and allocations, do you have any price and wage controls being planned? Certainly they are not in effect.

Mr. BERTSCH. Yes, sir; we have none in being. The authority for wage and price controls was taken away from the executive branch by the legislative branch in 1953 and not reinstituted.

The administration of this program would not necessarily be under the Department of Commerce, it would be under an agency designated by the President.

COPPER SITUATION

Mr. EVINS. How about the critical materials? What is the situation with respect to copper?

Mr. BERTSCH. The copper story, of course, is a long one, and I think it deserves a little telling.

The strike has been in existence since last July, it is now in its eighth month. We have been living off of imports and inventories and some domestic production resulting from secondary sources.

The most interesting development in the copper situation since the strike began has been the activities of the longshoremen, who refused to unload copper as of the 23d of last month. At that time we froze all refined copper in the United States for defense use, and that freeze is still in effect. We have reserved all refined copper for defense use. As soon as we are assured that copper is being unloaded at the docks in an uninterrupted manner, we possibily will unfreeze the copper that is in civilian refiners' hands.

The national difficulties occasioned by the copper strike are legion, not the least of which is the negative balance of payments, which in the last monthly period runs somewhere in the neighborhood of an annual rate of a billion dollars.

Mr. EVINS. That is a bad report and we are all concerned about it. We talk about long-range plans, we talk about short-range plans, and have been talking about them for years. I hope the Secretary of the Treasury and the Department of Commerce will come up with some answers.

Mr. TALCOTT. The answer to cut off imports is sort of a strike-breaking answer, is it not?

Mr. BERTSCH. Of course it was the international longshoremen that refused to unload as of the 23d of February.

Mr. TALCOTT. Soldiers or somebody could unload for defense purposes, could they not?

Mr. BERTSCH. The longshoremen have indicated that they would unload the material from the docks for all companies engaged in defense work or all companies which were not engaged directly in the strike. Now, copper is being unloaded. However, the total amount that is available in the United States, both from foreign sources and from domestic sources, is really not sufficient to run our economy over an extended period of time.

Ultimately we will not have enough copper unless the strike is settled. Otherwise, the economy will grind slowly to a halt.

Mr. EVINS. Besides copper, what other specific areas of material shortages are causing difficulty at the present time?

Mr. BERTSCH. There are no specific areas that are causing difficulty in respect to the defense effort because our priority system guarantees the defense effort will receive what is necessary.

Mr. EVINS. Defense is getting all the copper it needs for defense purposes?

Mr. BERTSCH. Yes, it is.

Mr. EVINS. And all it needs of other items?

Mr. BERTSCH. Yes, sir; there is no question about it.

Mr. EVINS. And if controls come, they would come with the civilian part of the economy first?

Mr. BERTSCH. Yes, that is right.

Mr. EVINS. The defense under the law has the priority.

Mr. BERTSCH. That is correct.

Mr. EVINS. Can we support a substantial war effort without extending our priorities and allocations to the civilian sector, in your judgment?

Mr. BERTSCH. That depends upon what we mean by a substantially expanded war effort. The President has authority under the Defense Production Act to impose controls in the civilian economy if the material requirements for defense create an appreciable hardship in the civilian economy. If defense requirements go up appreciably, obviously, the distortions may become so great that some action may have to be taken with respect to civilian controls. There is however no disposition on the part of the Executive branch of the Government at this time, or in the foreseeable future, to impose civilian controls.

EXECUTIVE RESERVE PROGRAM

Mr. EVINS. Tell us about the status of your executive reserves. Are you keeping your executive reserve program current and viable?

Mr. BERTSCH. Mr. Chairman, we have, as I mentioned, the largest component of the executive reserve. We currently have on board slightly over 1,450 executive reservists, and we have a goal of 3,000. We have conducted already 22 meetings during fiscal year 1968, including participation in the national meeting that was primarily directed by the OEP. The national conference was held here in October 1967. During all these meetings we had a total attendance of nearly 1,100 executive reservists. We have planned for the rest of this fiscal year an additional 19 meetings, which should complete our coverage of training efforts over the entire country.

We think this a tremendously important activity and we will continue through the years to prepare our executive reservists to serve us either during a conventional war or during a nuclear war.

Mr. EVINS. You state here that you had 26 conferences.

Mr. BERTSCH. Twenty-two, sir to date.

Mr. EVINS. This justification says 26.

Mr. BERTSCH. I think that talks about fiscal year 1967. I was talking about fiscal year 1968 to date.

Mr. EVINS. Right. Total executive reserve enrolled at the beginning of last year, 1,389.

Mr. BERTSCH. Yes.

Mr. EVINS. Year-end total was 1,435 notwithstanding a loss of 15 by attrition. Applications of an additional 207 candidates were in varying stages of processing at the end of the year.

Mr. BERTSCH. That is correct, sir. We have currently 153 candidates in process which will bring ourt total complement up to around 1,600 within the next month or so.

Mr. EVINS. The program to modify the boundaries of the Department of Commerce field offices for mobilization purposes was completed, and the boundaries for such purposes now coincide with OEP and OCD regional boundaries. This is for efficiency and coordination.

Mr. BERTSCH. That is correct, sir. It is an administrative detail, but we believe an important one.

DEFENSE NEEDS

Mr. EVINS. I think that is very good.

Has the Congress given you sufficient legislative authority to assure without question the fulfillment of all defense needs of Vietnam in preference to delivery of civilian materials and products? Do you need any legislation?

Mr. BERTSCH. No; we have all the legislation that is necessary in order to support the military effort.

This is a real tribute to the foresight of the Congress in continuing the priorities and allocation systems since 1953.

Mr. EVINS. You indicate in your budget nickel shortages occurred. Have you been able to overcome this somewhat?

Mr. BERTSCH. No, sir. The nickel shortage was discussed at the last appropriation hearing last year and it is still with us. Not, as I mentioned, a shortage for defense; but a total national nickel shortage is still with us, and undoubtedly will continue certainly throughout the next couple of years. The increases in mining activities in Canada have been delayed and probably will not come in for another year or so. An increase in nickel availability from other sources of the world, Guatemala, New Caledonia, and other areas which are being explored at the present time have not as yet borne fruit.

The northern Minnesota mine, which was proposed for exploration by International Nickel Co., has run into some problems. Because of the low amount of nickel contained in the ore, it may not be economically feasible.

Mr. EVINS. The demand for nickel, both by defense and nondefense consumers, continues at a high level?

Mr. BERTSCH. Yes, sir.

We set aside 23 percent of the total availability of nickel each month.

Mr. EVINS. Supply requirements study for nuclear war and reconstruction. OEP provided BDSA with an economic model for the first 3 years following a nuclear attack.

How can you look in the globe and tell these things so wisely?

Mr. BERTSCH. It is very difficult, sir. We do not say we are a hundred percent correct, but we have to look at it in the light of the guidelines given us.

Mr. EVINS. You need to prepare plans. The National Resources Analysis Center of OEP is your new resources analysis center. The BDSA is the chief source of production capacity information. You are the one that supplies them with the information?

Mr. BERTSCH. With our segment of the information, not all of the information, sir.

Mr. EVINS. BDSA abstracts from the IEB analyses. Tell us what IEB is.

Mr. BERTSCH. The Industry Evaluation Board is an organization set up by the President by Executive order, which assesses the importance of facilities and products in the national economy for defense purposes.

NATIONAL RESOURCE ANALYSIS CENTER SUPPORT

Mr. EVINS. BDSA abstracts from the Industry Evaluation Board analyses plant production capacity data, applies appropriate codings and geographic coordinates for each plant listed. And you submit to the Resources Analysis Center decks of cards punched out in the format it has prescribed. You serve it up to them ready to put in the computer.

Mr. BERTSCH. Yes, sir.

Mr. EVINS. We are transferring this information directly on magnetic tape.

Essential survival items. They were completed by BDSA. You say there are 21 different types and eight different types of these particular things you will need. How can you tell this?

Mr. BERTSCH. There are a whole host of survival items or items which are called survival items. These are items without which people could not survive in the event of a nuclear emergency. This list was developed in conjunction with and under the direction of the OEP some years ago.

Mr. EVINS. You assist the OEP in your stockpile activities by preparing updated requirements. You have been doing this for some time, have you not?

Mr. BERTSCH. Yes, we continue to do that.

Mr. EVINS. Keep it current and up to date?

Mr. BERTSCH. Absolutely, sir.

BUREAU OF THE CENSUS—OEP DELEGATION

Mr. EVINS. We will place in the record 23 and 24, a statement of the mission of the Bureau of the Census.

(The pages follow:)

BUREAU OF THE CENSUS

OEP DELEGATION

STATEMENT OF MISSION

The preparedness responsibility of the Bureau of the Census is an extension of past Bureau activities in providing statistical services for defense mobilization. These services range from collecting and compiling data through new surveys to special tabulations and analyses of data already collected.

Under Executive Order 10999, issued February 16, 1962, the Secretary of Commerce, among other things, is responsible for the collection and reporting of census information on the status of human and economic resources, (including population, housing, agriculture, manufacturing, mineral industries, business, transportation, foreign trade, construction, and governments) as required for emergency planning purposes. Consistent with this responsibility, the Bureau of the Census also maintains a readiness to take postattack surveys to provide information on surviving populations and resources.

The Bureau is one of the most important suppliers of basic information to the National Resource Analysis Center. It collects and tabulates special data in addition to statistical information provided in the course of its regular work; and the technical staff of the Bureau acts in an advisory capacity to NRAC, assisting in the full use of census data and facilities.

CURRENT STATUS

The Bureau of the Census has been an active participant in NRAC activities since NRAC's establishment. In the important areas of population, housing, and industry the Bureau is the only agency capable of providing basic data. Popula-

tion and housing data from the latest census have been supplied to NRAC and are entered into the damage assessment system by small geographic areas called standard locations. There are over 43,000 standard location areas in the present NRAC file. Industry data are supplied on an establishment basis. Data supplied for these establishments include employment, value added, inventories and shipments, and are for calendar years 1962–65.

Bureau participation in NRAC activities is carried out through the assignment of 2 employees who serve on the NRAC staff and whose major functions are to advise NRAC on the use of census data and to insure that the confidentiality of census data is maintained, as required by law.

MAN-YEARS AND OBLIGATIONS

Program objective	Fiscal year 1968		Fiscal year 1969	
	Professional man-years	Obligations	Professional man-years	Obligations
1. National Resource Analyses Center representation	2.0	$34	2.0	$40
2. Permanent plant file maintenance and updating	1.3	15	1.3	16
3. Establishment of agriculture data files	4.1	42		
4. Update small manufacturing, wholesale, retail, and service files			1.6	25
Total	7.4	91	4.9	81

YEAREND EMPLOYMENT

Position	Location	Grade	Yearend employment		
			Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Statistician	Washington	GS–14	1	1	1
Do	do	GS–7		1	
Do	do	GS–9			1

CENSUS BUREAU RESPONSIBILITIES

Mr. EVINS. Mr. Bertsch, we think you are an able administrator and your requests are modest in line with last year.

On page 23 you are asking for $81,000 for the census portion of your work. Tell us about that.

Mr. BERTSCH. I have a gentleman from the Census Bureau here. Mr. Scheller is with us today. With your permission, I will ask him to answer that.

Mr. SCHELLER. The $81,000 for census support to the National Resource Analysis Center involves two full-time persons assigned to the Center to supervise the preparation of census data in special format suitable for NRAC computer.

Mr. EVINS. In other words, you take the census report, analyze it, and tell the Resources Center of OEP what it means?

Mr. SCHELLER. Yes.

Mr. EVINS. You are the interpreter for them from the Census Bureau?

Mr. SCHELLER. These are special extracts from our regular census and survey work that OEP has required for damage-assessment purposes and their economic-model purposes.

Mr. EVINS. Off the record.

(Off the record.)

Mr. BERTSCH. Incidentally, Mr. Chairman, any request for information under the Defense Production Act is mandatory. So we utilize

the mandatory request for information for the administration of our priority system.

Mr. TALCOTT. Only parts of the long census questionnaire are mandatory. Just the name, address, and number of people in the family. The rest is not mandatory; is that right?

Mr. SCHELLER. No, sir.

I have not been connected with population census for some time, but as I understand it all parts of it are required.

Mr. TALCOTT. So you do use some of that information in your analyses?

Mr. SCHELLER. Yes, sir; we take over extractions of data that are required. Some of it is population data and some of it is industrial data.

Mr. TALCOTT. This is information that you have no authority to obtain except indirectly through the use of the census material?

Mr. SCHELLER. Yes, that is true. However, it remains in Census Bureau hands. That is one of the prime purposes for my assignment to the location. We maintain it. There is no breach of confidentiality. The only thing we release from the data which is under Census supervision are summaries which do not reveal any individual information.

Mr. EVINS. Gentlemen, we thank you. We think you have an important mission and wish you good luck.

Mr. BERTSCH. Thank you, Mr. Chairman.

Mr. EVINS. We will meet at 1 o'clock.

AFTERNOON SESSION

DEPARTMENT OF AGRICULTURE

WITNESS

GEORGE H. WALTER, DEFENSE COORDINATOR

Mr. EVINS. The committee will come to order.

We have with us Mr. George H. Walter, the defense coordinator for the Department of Agriculture, with respect to the appropriation for his functions in connection with the Office of Civil Defense and defense mobilization.

Mr. Walter, we will be pleased to hear you.

GENERAL STATEMENT

Mr. WALTER. Mr. Chairman, members of the committee and staff, I am George H. Walter, Acting Assistant to the Secretary, and by his direction coordinate the defense mobilization and other emergency programs of the Department of Agriculture.

Under Executive Order 10998, the Secretary and through him the Department of Agriculture has responsibilities for assuring adequate production of food, for its distribution through the wholesale level, for rural fire protection planning, and other related functions. Through administrative regulations and standby delegations he has assigned these emergency responsibilities among the various USDA agencies with the nearest comparable peacetime functions.

In the field, both at the State and county levels, the heads of the USDA agencies with field offices are organized as USDA defense

boards. They have been assigned responsibility for carrying out specific emergency responsibilities and are authorized to act on their own authority if cut off from national direction. Handbook guidance and instructions on how to carry out these responsibilities have been provided. We call this arrangement built-in readiness and we feel that these USDA people will be able to meet the demands on them should the defense situation so require. While we have highly qualified and trained people, each has full-time regular work assingments. Yet as a part of our defense readiness, these defense board members must be kept aware of their defense assignments and of the latest directives for carrying them out in an emergency. There is such a board in each State, the District of Columbia, Puerto Rico, the Virgin Islands, and in nearly 3,000 counties.

To assist in maintaining the capability of these USDA defense boards to meet possible emergency conditions, I have fieldmen who we call emergency program coordinators to meet regularly with State government officials and with USDA State defense boards. They help answer questions on how USDA people should carry out their standby instructions, help them plan training for USDA county and metropolitan area defense boards. They also provide liaison with the regional offices of the Office of Emergency Planning and the Office of Civil Defense. Four of these men are located in Seattle, Wash.; Chicago, Ill.; Dallas, Tex.; and Denver, Colo. The others travel out of Washington, D.C., so that when not traveling, they can assist me with the overall program coordination.

The entire $187,000 in the OEP delegate agency request is to finance this small coordination staff. All other defense-readiness work in the Department of Agriculture is carried out as a part of the job assignments of our regular employees. The budget request will permit us to continue this staff at its present level and in its present training activities. It is our belief that this is the minimum staffing level necessary to maintain the rather extensive defense-preparedness capability that USDA has developed over the past 10 years. I appreciate this opportunity to briefly describe the defense coordination functions of my office and staff and will be glad to answer any questions which you may have.

JUSTIFICATION MATERIAL

Mr. EVINS. Thank you, Mr. Walter. That is a very concise statement. We will place in the record in connection with your statement your justification sheets, pages 5, 6, and 7.

(The pages follow:)

U.S. DEPARTMENT OF AGRICULTURE

OFFICE OF THE SECRETARY

NARRATIVE STATEMENT

1. *Statement of mission.*—The Secretary of Agriculture has defense responsibilities under Executive Order 10998 covering assurance of adequate food and related agricultural products for use in either limited or nuclear war and under Executive Order 10958. The responsibility for carrying out these functions has been delegated within USDA with direction for the program being given to an Assistant to the Secretary. His responsibilities include maintaining liaison with executive departments and Congress with respect to policy matters, supervision

and direction of USDA National, State, and county defene boards and the USDA part of the national executive reserve program and providing policy guidance to USDA agencies in carrying out specific defense assignments. He supervises seven USDA emergency program coordinators who provide liaison with OEP–OCD regional offices. His responsibilities also include coordination of USDA natural disaster operations.

The overall objective is to provide leadership and coordination throughout the Department of plans and programs which will insure the maximum utilization of food and agricultural resources under conditions in a national emergency and assure coordination of USDA plans with those of other governmental organizations. The emergency program coordinators also provide assistance to States in their emergency planning to assure coordination of their plans such as for food rationing and rural fire control with USDA arrangement.

2. *Current status.*—USDA defense boards have been named at the National, State, and county levels. Emergency responsibilities have been assigned within USDA. USDA State and county defense boards have instructions in the form of defense operation handbooks to guide them in carrying out emergency responsibilities. There are presently four persons in the Office of the Secretary, an Assistant to the Secretary of Agriculture, his deputy, and two secretaries with the responsibility for carrying out the defense coordination assignment of the Department. The seven emergency program coordinators are their field staff. The following represents some of the defense assignments currently being emphasized:

(*a*) Training meetings and training exercises were held for USDA State and county defense boards. These were designed to develop an understanding of USDA emergency responsibilities and how they should be handled if national-level direction is limited due to the emergency.

(*b*) Developing an awareness among the food trade of how food would be managed in an emergency. A notice of how USDA intends to carry out its responsibilities was published in the Federal Register to advise the trade and obtain their comments.

(*c*) The food sections of State emergency operations plans were reviewed either during development or subsequently to assure consistency and agreement on how emergency problems should be handled.

(*d*) Procedures for carrying out specific defense assignments were revised and perfected. These included new plans for emergency credit arrangement, standby seed use regulations, United States-Canada food arrangements as well as revising and perfecting other emergency plans.

3. *Objectives for fiscal year 1968.*—During fiscal year 1968 emphasis will be on improving Federal-State arrangements for meeting emergency responsibilities relating to food, rural fires and other USDA defense responsibilities. USDA will cooperate in OEP and OCD readiness exercises. The initial USDA unit in the national defense executive reserve program will be trained and expanded. Contacts and cooperative arrangements with State governments will be maintained. Coordination with OEP–OCD regional offices and field offices of other Federal agencies relative to defense preparedness will continue. The need for food reserves will be reviewed. USDA standby instructions to its field people for how they should carry out USDA emergency assignments will be revised and reissued.

4. *Objectives for future years.*—The staff to be financed by the requested budget will work with other Federal agencies and with State and local officials to assure close coordination of plans to meet possible emergencies. Eight field coordinators will provide one to work with each of the OEP–OCD regional offices and with the USDA State defense boards to assure adequate readiness to carry out emergency responsibilities assigned USDA under executive orders and other legislation. This coordination staff is essential to maintaining a degree of readiness to meet emergency responsibilities among the regular USDA employees who in an emergency would be called on to assume their added responsibilities. The constant turnover in staff makes periodic review and retraining necessary if an adequate capability to carry out defense responsibility is to be maintained. Plans call for continued training of the USDA part of the national defense executive reserve program and a moderate increase in the number of reservists assigned to assist USDA State defense boards with emergency food problems.

The increase of $2,000 provides for full year costs in fiscal year 1969 of the pay increase pursuant to Public Law 90–206.

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES
FINANCIAL AND PERSONNEL SUMMARY

	1967 actual		1968 estimate		1969 estimate		Change 1968/1969	
	Year-end employment	Obligations	Year-end employment	Obligations	Year-end employment	Obligations	Year-end employment	Obligations
Obligations and employment by activity:								
1. Food management preparedness		$31,774						
2. Assistance to Defense Board Chairman		23,000						
3. Program coordination and direction	4	70,826	4	$72,000	4	$73,000		+$1,000
4. Field defense coordinators	9	140,343	5	113,000	5	114,000		+1,000
Total	13	265,943	9	185,000	9	187,000		+2,000
Obligations by object class:								
11.0 Personnel compensation		209,901		143,000		145,000		+2,000
12.0 Personnel benefits		14,228		11,000		11,000		
21.0 Travel and transportation of persons		26,718		25,000		25,000		
22.0 Transportation of things		35						
23.0 Rent, communications, and utilities		3,729		1,000		1,000		
24.0 Printing and reproduction		2,339		500		500		
25.1 Other services		136						
25.2 Services of other agencies		7,714		4,000		4,000		
26.0 Supplies and materials		976		500		500		
31.0 Equipment		167						
Total		265,943		185,000		187,000		+2,000

APPROPRIATION REQUEST, FISCAL YEAR 1969

Mr. EVINS. I do note in reading the statement you said you have a constant turnover, which makes periodic review and retraining necessary if an adequate capability is to be maintained. Why do you have this turnover?

Mr. WALTER. This is just a normal thing. The people retire, die, are promoted, new people are hired. It is the normal course of human events. It is not any higher, I do not believe, than most other agencies but this is just one of the things that make our job a little more difficult.

Mr. EVINS. You had $185,000 last year. You need $187,000 this year. Is this $2,000 related to the pay act increase?

Mr. WALTER. That is right, sir.

BEEF IMPORTS

Mr. TALCOTT. I would like to ask one general question. This morning we talked about the problems relating to copper and the emergency planning with regard to copper when it is in short supply. What do you project with regard to beef? It seems to me that the problem with beef production is a great deal more serious than with copper because if we lose our beef industry through the foreign imports, it is not easy to redevelop the beef industry. It will require 5 or 6 years before we can get back into the beef industry if the industry were to go bankrupt. Do you have any emergency plans if this should happen because of the cheap meat imports from Argentina, Australia and Ireland?

Mr. WALTER. There are regulations on the statute books that regulate the amount that can be imported, and imports are running below this level. I happen to be a beef farmer from Illinois, myself, and I am concerned with this.

Mr. TALCOTT. You are not worried about the beef industry?

Mr. WALTER. Personally, I am feeding beef and I think we will do all right this year. We have plans in our emergency planning for taking care of anything that is due to nuclear war, but beef imports are not a part of my responsibility.

EMERGENCY ROLE

Mr. TALCOTT. So your only responsibility is planning in the event of nuclear war and not for the other emergency problems that we might have?

Mr. WALTER. And for any type of natural disaster that comes along, or nonnuclear war also.

Mr. EVINS. We want the rural areas protected as well as the metropolitan areas.

Mr. WALTER. We are doing as well as we can.

Mr. EVINS. Thank you, Mr. Walter.

DEPARTMENT OF THE INTERIOR

WITNESSES

FRED P. HOBART, DEFENSE COORDINATOR
JOSEPH BREEN, BUDGET OFFICER
JOHN RICCA, DEPUTY DIRECTOR, OFFICE OF OIL AND GAS
WILLIAM E. S. FLORY, DIRECTOR, OFFICE OF MINERALS AND SOLID FUELS
LESLIE JOCHIMSEN, ADMINISTRATOR OF DEFENSE ELECTRIC POWER ADMINISTRATION

Mr. EVINS. We now have the officials of the Department of the Interior. We have with us George E. Robinson, Deputy Assistant Secretary for Administration, Mr. Fred P. Hobart, the Defense Coordinator, Mr. Joseph Breen, Budget Officer, Mr. John Ricca, Deputy Director, Office of Oil and Gas, Mr. William E. S. Flory, Director, Office of Minerals and Solid Fuels, and Mr. Leslie Jochimsen, Administrator of Defense Electric Power Administration. Gentlemen, who is going to testify?

Mr. HOBART. I am, sir. Mr. Robinson regrets that he was called away. He was here this morning. I am Fred Hobart, the Defense Coordinator. I believe you have a copy of the statement. If you have any questions after I give the statement, our staff will be glad to endeavor to answer them.

GENERAL STATEMENT

Mr. HOBART. Mr. Chairman, members of the committee; I am pleased to have the opportunity to appear before you on behalf of those organizations of the Department of the Interior which carry out responsibilities delegated to Interior by the Office of Emergency Planning. These activities have been assigned by the Secretary to the

Defense Electric Power Administration, the Office of Oil and Gas, and the Office of Minerals and Solid Fuels. This request for $292,000 will finance a total staff of 20 in the three organizations. This request is $3,000 over that provided in the current year budget and that increase is for pay costs.

Our responsibilities are within the overall responsibilities of the Office of Emergency Planning but limited to the resource areas of electric power, petroleum and gas, solid fuels, and minerals.

The request for the Defense Electric Power Administration will finance three positions all located in the field; nine positions in the Office of Oil and Gas—also all field positions; and eight central office positions in the Office of Minerals and Solid Fuels.

While this appropriation finances only these few positions, we draw heavily upon technical competence and administrative assistance throughout the Department to supplement their efforts. Assistance is also obtained from the private sector and local and state governments. Each year we are able to report significant progress in the refinement of our plans through these joint efforts.

Details in support of our request are contained in the justification. We will be pleased to answer any questions the committee may have.

INTERIOR'S EMERGENCY ROLE

Mr. EVINS. The basic mobilization planning as far as Interior's activity on the Federal level is largely complete, you stated in your justification, and is formally recorded in chapters X and XI of the "National Plan."

Necessary now is the carrying of these plans to the OEP regions and to the States. This says that you have the job done. What work are you doing over there?

Mr. HOBART. Mr. Chairman, I look at this somewhat like a football team. The coaches get together in Washington, so to speak, and we set up our plans. Then we take our plans to the field. They have to be gone over, reviewed, and sold to the industries, to the States, and to the local governments. It is a continuing program. Now, we have changes. The agencies that will take over operations, if an emergency should happen, are staffed by people who are today in industry. We have to keep them interested, we have to call them together, explain the plans to them, find out from them if they think the plans will work. It is a continuing program which we have to keep updating and reindoctrinate industry personnel all the time.

Mr. EVINS. The Department of Interior is a great department. It knows all about our resources, electric power, petroleum, solid fuels, and minerals. In case of an emergency, how would you conserve and utilize properly the electric power resources of the Nation?

ELECTRIC POWER RESOURCES

Mr. JOCHIMSEN. We have an organization that is made up of about 60 WOCs. The country is divided principally into 19 areas which are largely supply areas of the power systems. We have a director, directors' deputies, one thing or another. We are set up so that in theory if anything ever happens we have a man at each power area throughout the United States who would be in charge, to make the decisions that

would have to be made immediately. Later on at such times as communications would be reestablished, and one thing or another, we would hope we would be able to give some guidance from Washington.

But we are primarily set up to be able to take care of a quick emergency that each person is going to have to act upon his own. We have an emergency operations handbook which in turn sets out what each man would do. We have the liaison with the State, liaison with the OEP–OCD centers.

Mr. EVINS. The electric power companies want to provide continuity of electric service, they do not want any blackouts or discontinuance of service. I am sure that the public power systems have the same attitude.

Mr. JOCHIMSEN. Exactly.

Mr. EVINS. You are not going to control them?

Mr. JOCHIMSEN. No, sir.

Mr. EVINS. You might tell them "Let's keep the power on the line", and they are going to do that anyway.

Mr. JOCHIMSEN. That is exactly right. That is why we look entirely to industry. We only have three people in the whole United States under this budget. We look to the industry to do this kind of thing. Obviously, as long as there is an adequate supply of power for everyone there is no problem. It is when there is a shortage, we then have problems of pirorities, allocations, curtailments of power, so on and so forth.

In addition to this, of course, we have the responsibility that should the worst happen and that copper would become an allocated material, our office would then have that——

OIL AND GAS INDUSTRY

Mr. EVINS. I was going to ask about these other items.

What do you do in petroleum and gas; what does your office do specifically?

Mr. RICCA. I am John Ricca, Deputy Director in the Office of Oil and Gas.

The program of emergency preparedness comes under my jurisdiction.

Mr. EVINS. This is for oil and gas?

Mr. RICCA. Yes.

Mr. EVINS. What do your plans encompass?

Mr. RICCA. We constantly plan and have procedures and programs to carry out that are responsive to all types of contingencies, not just nuclear war. For example, international tension, which we are engaged in right now, we have a program of constant monitoring and surveillance to make sure that we understand and know the precise world and domestic oil situation so that we can supply our military forces. Then in a situation which expands or explodes into something like the Middle East cutoff, we have responsive plans that are related to the Defense Production Act, which authorizes the mechanism of the use of the voluntary agreement. We have committees that stand by and that come in and help us make the necessary detailed studies to find out exactly what our position is, then whether or not we have to implement (under the voluntary agreement) certain pro-

grams in order to assist the industry in carrying out its responsibility to supply the world with petroleum and gas. Now, in this past emergency, fortunately we were poised to implement Government action if it was necessary but the industry was capable enough to come out of this themselves. So, therefore, we did not implement other actions that are called for under the voluntary agreement plan of action.

These would have been precise, coordinated, cooperative schedules under Government surveillance that would have enabled the industry to pool their resources, exchange resources, exchange tanker capability, line capability, and so forth. Fortunately, our economy is able to support the situation that we just went through. Therefore, we did not have to implement any specific Government programs.

If this escalates further into something of great magnitude, we have plans that bring about the implementation of the nucleus staff of the Office of Oil and Gas supplemented by the executive reservist system, up to the degree where we could implement the entire emergency petroleum and gas plan.

Mr. EVINS. What you are testifying is that your functions are not related to periods of war emergency, but you are actively concerned with the daily supply of gas and oil.

Mr. RICCA. Yes, but we do have funded for this particular program nine positions in field offices to help us maintain currently this surveillance and this expertise that we need in the event we go from a minor emergency to a very serious one.

Mr. EVINS. Nine positions and $111,000.

Mr. RICCA. Yes; $111,000 is applicable to our nine positions.

MINERALS AND SOLID FUELS INDUSTRY

Mr. EVINS. What are your plans with respect to solid fuels?

Mr. FLORY. The job is to make sure that there is an adequate supply of coal and coke to meet essential requirements and see to it that in an emergency these materials get where they are most needed. We are still in the plan-formulating stage. We are drawing up our handbook.

Mr. EVINS. Do you mean after all these years you have not prepared a handbook yet? You are still formulating your plans? I thought this other agency said they had the plans on file with the Office of Emergency Planning. You have not published your handbook yet?

Mr. FLORY. No, sir; we have not, neither in minerals nor in solid fuels. This is a first priority at the moment. We hope to have a first draft by the end of this fiscal year.

Mr. EVINS. What did your bureau accomplish last year?

Mr. FLORY. We have designated virtually 100 percent of the key field staff for both organizations. There are a few holes left in it at the moment. We completed the supply estimates for nuclear war and conventional war. We obtained from the Department of Commerce a delegation of authority for priorities and allocations of minerals.

Mr. EVINS. You have staffed your Office?

Mr. FLORY. The field offices.

Mr. EVINS. You staffed your field offices and you have determined the minerals you think the war effort will need?

Mr. FLORY. Yes, sir.

Mr. EVINS. What else have you done?

Mr. FLORY. As I mentioned earlier, we now have our handbooks about half done.

Mr. EVINS. That is your goal for 1969, to publish this handbook?

Mr. FLORY. Yes, sir. We shall have meetings of the people who are assigned to various segments of the program for purposes of reviewing our first drafts, of modifying them, and of training the personnel to carry out these functions. This is our major new objective for 1969.

Mr. EVINS. What does your inventory show with respect to our solid fuels?

Mr. FLORY. Our inventories—being perhaps more specific than you intended—our inventories at the consumer levels are now the highest they have ever been. The buildup of inventories, the extraordinary buildup of inventories started this last spring. While production is up and consumption is up, we are not at this moment quite sure what the significance of the increased inventories is. It may be that the industry, and particularly the electric power industry, has decided that they should maintain on hand a higher level of inventories than they have in, let's say, the past 10 years.

Mr. EVINS. The coal people are worrying about the shortage of coal. The electric people say there is a shortage of kilowatts. The gas people say there is plenty of gas, they want to sell the gas.

Mr. FLORY. We have plenty of coal, too.

Mr. EVINS. You have plenty?

Mr. FLORY. We would like to sell some more.

Mr. EVINS. Who wants to tell us about the other items that you include in this category 3?

Mr. FLORY. There are approximately 84 basic metals and minerals in this category.

STOCKPILE PROGRAM

Mr. EVINS. Are these all strategic materials that are being stockpiled?

Mr. FLORY. Oh, yes; all of them are strategic.

Mr. EVINS. All of them?

Mr. FLORY. Not all of the strategic basic metals and minerals are stockpiled.

Mr. EVINS. They had about $10 billion in the stockpile. This committee and others of the Congress told them that they had a surplus, and why not sell some of them. So they have sold some, but in a few items there is still a shortage. In these items they have not attained their objectives.

Mr. FLORY. No, sir.

Mr. EVINS. Are you helping GSA and OEP attain their objectives in the stockpiling program?

Mr. FLORY. Continuously; of course. Through the normal operations of the Department of the Interior we are stimulating production, domestic production particularly of those materials which are in short supply. Procurement of materials for the stockpile becomes quite a difficult problem at the moment so far as OEP is concerned. I think the question, primarily, is one of financing. Manifestly, if funds were available to purchase many of the strategic and critical materials, there just isn't an adequate world supply to permit us to stockpile these materials at the present time.

Mr. TALCOTT. The Office of Emergency Planning does not actually stockpile or manage the piles of stock? This function is left to GSA, is it not?

Mr. FLORY. The determination of what the stockpile objective is, in terms of tons of a particular material, is OEP's job, with our advice on supply estimates and Commerce's estimates on requirements.

Mr. TALCOTT. But you don't have any jurisdiction over any of the stockpiles after they have been stocked?

Mr. FLORY. No. Once the stockpile objective is established, the procurement and maintenance is delegated by OEP to the General Services Administration. We and our experts work laterally with the General Services Administration on procurement.

Mr. TALCOTT. The actual stockpiling of the different materials is quite different? If you stockpiled grain, for instance, and the farmers could hold grain in their own granaries, you wouldn't have to have GSA build warehouses for them. Whereas, with uranium, they would probably have to locate uranium in a special area and GSA would have to assume the care and custody. Now, electrical energy, you just have to leave that with the producer.

Mr. FLORY. Right.

Mr. TALCOTT. So, actually, there is quite a difference in the amount of planning that is necessary, and checking to make sure that they maintain these stockpiles up to par. Do you check to ascertain that the stockpiles in these various places, with the private owners, with the Government, with everybody, is actually there?

Mr. FLORY. That is General Services Administration's job. They run continuous checks on physical stockpiles to make sure that the materials are there, that they are in good condition, that the storage facilities are adequate.

Mr. TALCOTT. Then what do these three men do who are involved with the electrical-energy stockpiling? You mentioned there were three people throughout the country.

ELECTRIC POWER INDUSTRY

Mr. JOCHIMSEN. We don't have anything to do with stockpiling. Electric power being something that you make as you use it, our people are in the nature of emergency planning people, to develop and explain our emergency plan. You see, we have a plan, we think it is a very good one, but it depends upon the activities and the acceptance of this plan by the utilities themselves, because without their acceptance we have nothing. It does take constant effort.

Mr. TALCOTT. It takes three men to keep this plan up to date?

Mr. JOCHIMSEN. In the whole United States we have only three. Our office is very small. There are only two men here in Washington, three in the field. We try to cover the whole United States. Now, we have one in Texas and two on the west coast because they are, obviously, the furthest away from here. We have annual conventions or meetings, we have WOC's, as they are called.

Mr. TALCOTT. Have you ever convinced an electric-power producer they should do something differently from what they are doing now?

Mr. JOCHIMSEN. No. What our electric-power organization does—it is an organization of the industry. It is not Government, per se,

trying to tell them to do this or do that. What we try to do is organize them so that they are able and ready to take care of the problem if it ever arises. But we do not try to tell them to do anything differently than they are doing now. As a matter of fact, the planning for nuclear attack, the operation of the industry in one thing or another, is not really substantially different than what it is now. You get another factor introduced, perhaps, with fallout, loss of load, and so on and so forth, but it is just an effort to get the industry to keep looking at this problem.

PREPAREDNESS RESPONSIBILITIES

Mr. EVINS. Separate Executive orders have been issued by the President, through the Office of Emergency Planning, delegating certain functions to each of these specific areas. Executive Order No. 10997 assigns preparedness responsibility in the metals, minerals, and solid fuels areas to the Secretary of the Interior. This responsibility has been redesignated to the Office of Minerals and Solid Fuels under Mr. Flory. The basic mission of this Office is the development of national emergency plans and preparedness programs. We ought to know what the resources are in case of a national emergency. I thought all of these plans would have been prepared but Mr. Flory says that over the years we have not gotten them all completed yet. These plans should assure that an adequate supply of minerals, metals, and solid fuels will be available to meet emergencies and essential civilian needs during a mobilization.

Then you state in your justification that you have a 5-year program. You also have the program objectives for fiscal 1969: Recruit additional executive reservists. Tell us what you propose to do here.

EXECUTIVE RESERVISTS

Mr. FLORY. We have roughly available 100 executive reservists for minerals and solid fuels at the moment. I expect our goal will be around 150. It was higher at an earlier period but a review of the needs in relation to the plans which we are now developing suggests an executive reserve of about 150 plus the assignment of key officials of the Bureau of Mines and Geological Survey, and other Interior organizations. We should have a good strong key staff at national headquarters and in the field.

Mr. EVINS. How often do you meet?

Mr. FLORY. We met twice last year and I am hoping that in the current year we will be able to meet in each of the OEP regional offices, get the fieldmen acquainted with each other, know where they are supposed to report in an emergency, and next year I hope we can have a series of meetings which will include all of the Federal appointees and all of the executive reservists, at least one meeting.

Mr. EVINS. After you recruit them, then you have a training program. These people could train some of the Government employees; could they not? They are pretty knowledgeable in their field. Do you train them or do they train us?

Mr. FLORY. Both. It takes a complement of the government know-how plus the industry know-how in just about every major area of our organization.

Mr. TALCOTT. Are most of these people active in business or are they retired?

Mr. FLORY. Most of them are active. We recruit them when they are active and in some instances when they retire we keep them on.

Mr. EVINS. If a man owns a coal mine or an oil well, how do you train him?

Mr. FLORY. The normal man who is operating a coal mine does not think very much about the role of his industry in a defense emergency and he has not given a great deal of thought to how the Government ought to operate in an emergency. We tell him that he is going to be responsible for certain jobs and he had better start thinking, together with us, on precisely what he, as a Federal official will do should the emergency come. This is, in essence, the training.

Mr. EVINS. You say you have your regular customers, but in case of an emergency we want you to allocate a certain amount to us. If you do not, under the statute we will take a certain percentage of your production.

You let him know what you need. You have such an authority, but it is not frequently exercised?

Mr. FLORY. That is right.

Basically, of course, our solid-fuels plan is to keep the coal moving to the traditional customers of each of the mines, and of each of the distributors until the Government officials know and can determine which customers must have first priority.

Mr. RICE. I think that "training" is a misnomer for relatively small investments—we talk about three people from one whole industry—we are getting thousands of man-years of industry participation and cooperation for very little Government investment. They are training themselves. Once we get them interested and motivated and give them general guides, they start training among themselves.

Mr. EVINS. Industry participation, cooperation, and coordination is important. Besides the training, then, you collaborate with OCD and DOD with your plans.

And you perform additional functions as required. You have a multiplicity of duties here.

Your portion of this for the next year is estimated to be how much?

Mr. FLORY. $125,000.

Mr. EVINS. Gentlemen, keep us well prepared and our plans up to date. Let's always be ready.

Thank you very much. We commend you and the Secretary.

INTERSTATE COMMERCE COMMISSION

WITNESSES

M. E. FOLEY, ASSISTANT MANAGING DIRECTOR
GEORGE J. LOTITO, BUDGET AND FISCAL OFFICER
THOMAS J. BYRNE, DEFENSE COORDINATOR

Mr. EVINS. We have representatives of the Interstate Commerce Commission. Mr. Foley is Assistant Managing Director, Mr. Lotito is Budget and Fiscal Officer, and Mr. Byrne is Defense Coordinator of the ICC. This is the pioneer regulatory agency.

Do you have a statement, Mr. Foley?
Mr. FOLEY. Yes, we do.
Mr. EVINS. You may proceed as you wish.

GENERAL STATEMENT

Mr. FOLEY. Mr. Chairman, we appreciate the opportunity to appear in support of the 1969 budget for $48,000 for defense mobilization function delegated to the ICC. The mobilization responsibilities and functions assigned to the Interstate Commerce Commission have increased in importance with the Nation's demand and reliance on transportation. The Commission's role in emergency preparedness planning, which is broad in scope, has become more vital and the activities connected therewith have, of necessity, been intensified. The lifeline importance cannot be underrated in the sustained development of rail, motor carrier, inland water carrier, and public storage resources. Furthermore, the Interstate Commerce Commission must continue to provide guidance and consultation to the States in their development of State emergency transportation plans.

The Commission will continue to develop its plans within the guidelines furnished by the Office of Emergency Planning, coordinated with the Office of Emergency Transportation and other Federal agencies concerned with emergency transportation.

Three emergency standby organizations have been developed and have been staffed with qualified transportation industry officials and Commission personnel. The rail organization is staffed on a regional, State, and local basis, through recruitment and assignment of national defense executive reservists drawn from the ranks of top operating officials of the railroads throughout the country. The inland water emergency organization is staffed on a regional and State basis through the executive reserve program. The motor carrier emergency organization consists of 50 joint ICC-State Emergency Motor Transport Boards, composed of a senior State regulatory official, an industry representative, and an ICC official. The ICC member of the Board is supported by selected executive reservists possessing valuable background and experience in for-hire carriage, private carriage, passenger carriage, and vehicle maintenance requirements.

These standby organizations are presently about 90 percent complete. They are staffed with the best industry representatives available. If the interest and cooperation of these high-ranking industry representatives are to be kept alive, there should be no retrenchment in the support and guidance of the Interstate Commerce Commission.

Thirteen standby transport mobilization orders have been issued and given wide distribution to the transportation and shipping industries. These orders, by their terms, become effective upon the proclamation of the existence of a state of civil defense emergency by the President or by concurrent resolution of the Congress. Procedural order containing specific details and procedures are under development.

The amount of funds included in the fiscal year 1969 President's budget to cover ICC participation in civil and defense mobilization functions is $48,000. This is $1,000 more than the 1968 budget and the increase is to cover the increase in salaries.

This amount allows for only the maintenance activity of the standby emergency structures and the existing ICC unit of the national defense executive reserve, and limited cooperation and coordination with other agencies in development of overall emergency plans, and test exercise of these plans. The basic expenses incident to supporting and maintaining the reservist units, including expenses for participating in exercises and attending conferences, are assumed by the industry itself. This output exceeds, by 75 percent, the moneys now allocated to the Interstate Commerce Commission.

Since domestic surface transportation interlaces with all areas of economic endeavor, it is a necessary element of the total preparedness effort, and preparedness in these industries is vital to the Nation's defense.

Thank you, Mr. Chairman.

PREPAREDNESS ROLE

Mr. EVINS. A very good statement, with which I am sure we all agree. We have to have the railroads running, the trucklines, and the water carriers. You are not concerned with the air transportation in any way.

Mr. FOLEY. No, sir.

Mr. EVINS. What did your office accomplish last year?

Mr. FOLEY. Mr. Chairman, our accomplishments last year were along the line outlined in the statement in recruiting, processing, and bringing on board and maintaining our large standby executive reserve program.

Mr. EVINS. One of the largest categories in the executive reserves is in the field of transportation?

Mr. FOLEY. Yes, sir. We have on board something over 800 executive reserves in our three operating programs. It is a sizable effort for us to keep this reserve unit active and alive and most of our effort goes toward that end. Our plans for fiscal year 1969 include the following:

(*a*) Complete the review of State transportation plans developed under the OEP comprehensive program and assist OEP and the State transportation task groups in cooperative Federal-State implementation of the plans.

(*b*) Complete the drafting, interagency coordination, publication, and distribution of emergency readiness guidance for the railroad industry.

(*c*) Maintain the national defense executive reserve, assuring continuity of the emergency standby organization; recruit executives to fill vacancies; and appoint approximately 60 members to hold the total on the rolls to no less than 800 as of the close of the year.

(*d*) Maintain the national, regional, and field standby organization of executive reservists and the field staff of the Commission with emergency designations and assignments.

(*e*) Continue participation in regional level seminars or conferences for orientation and training of reservists and ICC field staff with emergency assignment.

(*f*) Provide support to, and participate in national and regional exercises designed by OEP to test emergency plans and measures under various assumed emergency conditions.

(*g*) Coordinate the Commission's plans and programs with representatives of the transportation industry, the Office of Emergency Planning, the Office of Emergency Transportation, other transportation agencies and the military in order to assure practical and effective emergency readiness in the domestic surface transportation area.

INLAND WATERWAY SYSTEM

Mr. EVINS. What is the status of our inland waterway system today?

Mr. FOLEY. In terms of the executive reserve or the mobilization program?

Mr. EVINS. Readiness for use.

Mr. FOLEY. As an industry it is an important function of course subject to our jurisdiction. It is an industry which has had its problems economically. Innovations instituted by other modes in the transportation of freight have made it more competitively difficult for water carriers to compete and operate profitably.

Mr. EVINS. How many miles of our inland waterway are completed and how many are planned? Where does the inland waterway system begin, up in Virginia, does it not, and it goes down through the Carolinas through portions of Georgia and into Florida and across Florida on through the gulf coast to Texas?

Mr. FOLEY. Apparently, Mr. Chairman, in our annual report for fiscal year 1967, we have included some statistics on water carriers subject to our jurisdiction. In order to be more responsive may we elaborate by inserting the material for the record?

Mr. EVINS. Yes, supply it for the record.

Mr. FOLEY. We will be happy to.

(The information follows:)

The Atlantic Intercoastal Waterway system extends from Norfolk, Va., to Fort Meyer, Fla., and the Gulf Intercoastal Waterway extends from Apalachee Bay (St. Marks) to Brownsville, Tex.

The inland waterways system total approximately 29,000 miles all of which are navigable and complete.

At the present time there are plans to make navigable approximately 6,000 miles of inland waterways.

EMERGENCY ROLE

Mr. TALCOTT. You have three emergency standby organizations for railroads, for buses, and for rent-a-cars, I take it. How do you coordinate all of these three? I think the most important problem in an emergency would be how you coordinate the buses, the motor freight, and the railroads.

Mr. FOLEY. I am not sure we, in our emergency programs, attempt to coordinate the operations in terms of providing, say, through coordinated transport service. The approach to the operation of the highway system carriers as opposed to the railroad system carriers in a national emergency is different. We plan to operate the railroads through the Commission's bringing on board this large staff on railroad executive reservists, making them employees of the Commission, and having them operate the railroads at the Commission's direction. This differs vastly from the approach to the motor transport system operation which will be largely done through the industry itself under the guidance and general operating plans and procedures that the Commission

and other agencies may have with respect to priorities for the movement of property or passengers between certain points.

Mr. TALCOTT. Do you plan for an atomic burst where railroads and highways are obliterated and where we still must maintain transportation facilities. Is that not part of your planning?

Mr. FOLEY. Yes, sir.

Mr. TALCOTT. This takes a good deal of coordination between road transportation and rail transportation, I would think. I would think you would have to plan for containerization, for instance, that would be suitable to boat, truck, and train. I would think that would be part of your planning.

Is there any such plan for coordinated containerization for that kind of emergency.

Mr. FOLEY. Perhaps there is, if I could ask the Defense Coordinator.

Mr. BYRNE. That would principally be the responsibility of the Office of Emergency Transportation to coordinate the various modes of transportation and the use of transportation. Our executive reservists, as Mr. Foley pointed out, consist of practical operating executives broken down in regional, State, and area concepts for the purpose of assisting in the execution of preparedness programs covering utilization, reduction of vulnerability, maintenance, and restoration of railroads, motor carriers, and inland water facilities, as well as the actual operation of railroads in an emergency.

Mr. TALCOTT. We will have someone else explain the coordination of all of the transportation facilities.

Mr. BYRNE. That is right. The coordination of all transport is done, of course, by the Office of Emergency Transportation or elements of transportation which the Commission has responsibility for, and those which FAA and Maritime and the others would have responsibility for.

They would have the role of coordination. And the rail executive reservists, the reservists themselves, numbering over 500 in all, now operating the Nation's railroads, would have the responsibility of rehabilitating and operating the Nation's railroads in times of emergency. They do it every day during emergencies, they have the know-how, they have the leadership, and they would have the responsibility as ICC men to rehabilitate, cannibalize if they needed to, and operate railroads.

Mr. TALCOTT. It seems, Mr. Chairman, that this agency has an entirely different function from the ones in the fuels. In fuels, they only guide; but these people are going to take over and operate.

Mr. BYRNE. That is right.

Mr. EVINS. There has only been once in the history of our country, in World War II, that the Government operated railroads for a time. Is that not right?

Mr. BYRNE. That is right.

Mr. EVINS. That only included the rails?

Mr. LOTITO. The Government did take over some trucking companies, Mr. Chairman, during World War II.

Mr. EVINS. You have your plans in case of an emergency.

Mr. BYRNE. We might say, also, all of our field men in the Bureau of Operations participate in this program, keeping up the interest of the industry in the field as well as their staff.

Mr. EVINS. You need about four jobs and $48,000.

Mr. BYRNE. That is right.

Mr. EVINS. Tell me, Mr. Foley, how often do you go before the Commission and talk with them about these emergency plans?

Mr. FOLEY. We report to the Commission at least monthly and oftentimes two or three times a month.

Mr. BYRNE. We do it quite often through the Managing Director's office. He would be the one who would have contact with and keep the Commissioners themselves enlightened and advised, and the Managing Director, of course, has a big interest in and watches over the operations of our mobilization program throughout the field.

Mr. RICE. I would like to indicate how interested the Chairman of ICC has been in this program. When the Congress cut this appropriation by roughly $1 million last year the Chairman himself came over to see Governor Bryant personally, he was that concerned about the continuation of the work.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages 63 through 70. And thank you very much. We wish you much success.

Mr. FOLEY. Thank you, Mr. Chairman.

(The pages follow:)

INTERSTATE COMMERCE COMMISSION—BUDGET ESTIMATE, FISCAL YEAR 1969
CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES

STATEMENT OF MISSION

The basic objective of the emergency preparedness functions of the Interstate Commerce Commission is to prepare and maintain programs, organizations, and procedures covering the provision of carrier service by the railroad, motor, and inland water carrier modes of domestic surface transportation. The responsibilities, which are assigned by Executive Order 11005, include planning for the utilization, reduction of vulnerability, maintenance, and restoration of each mode under any type of national defense emergency, including attack upon the United States.

The Commission provides guidance and information to industries under its jurisdiction, regarding emergency preparedness and readiness measures, and to States relative to the development of their transportation plans.

The Commission's emergency plans and measures support overall policies and national programs of the Office of Emergency Planning as expressed in the National Plan for Emergency Preparedness. The domestic surface transportation programs developed by the Commission are coordinated with other transportation agencies, the Department of Transportation (Office of Emergency Transportation), and the military.

The 5-year program

Preparedness programs initiated and sponsored by the Commission have been developed in accordance with long-range objectives designed to assure that domestic surface transportation industries and systems are prepared and capable of serving the defense needs of the Nation in national emergencies. These objectives include the development of a standby organization and a trained staff to provide guidance, counsel, and direction to the transportation industry in an emergency. The development of coordinated operational plans and implementing action guidelines relative to standby operations orders, priorities standards, and permitting procedures are integral parts of the overall objectives. These also include the provision of field assistance to States in the development of their emergency transportation plans.

The broad goals or ends to be achieved in civil emergency preparedness, and significant measures necessary to their accomplishment, have been submitted in accordance with OEP Circular 5600.1B dated May 23, 1967.

Current status and fiscal year 1969 objectives

In meeting the emergency readiness and mobilization planning responsibilities assigned to the Commission, reliance is placed upon the regular offices and bureaus in Washington, D.C., and the regional managers and other field staff of the Commission. Emphasis has been placed upon the development and maintenance of emergency standby organization, the issuance of guidance to the domestic surface transportation industry, and the interagency coordination of plans and programs as they are developed.

1. Emergency Standby Organizations

The Commission, through its carrier bureaus and the field staff, has established emergency standby organizations for implementing the emergency functions assigned this agency and to provide for rapid expansion of its emergency capability in the railroad, motor, and inland water carrier transportation areas in order to meet the requirements of a national defense emergency.

a. *Railroads.*—The National Defense Executive Reserve program has been utilized as a means of enlisting executive talent from the railroad industry, on a standby basis, to meet the staffing requirements of the agency in a national defense emergency. Executive reservists have been appointed to standby assignments at the regional, State and local levels. Regional staffing is on the Office of Emergency Planning eight-region basis, and State-level staffing is along State boundary lines. Terminal areas within each State have been designated at important rail complexes. In excess of 240 such terminal areas have been and are being staffed, through the assignment of reservists at these locations.

The railroad group of the ICC unit of the National Defense Executive Reserve included 549 members appointed and 148 additional nominees in process, as of June 30, 1967. The rail emergency standby organization is over 90 percent staffed.

b. *Motor Carriers.*—The Commission has programed a joint ICC-State Emergency Motor Transport Board in each State (except Hawaii which has a separate program to meet its requirement) and the District of Columbia. On each of the 50 boards are representatives of the ICC, the State, and the motor carrier industry. Formation of each board and designation of its chairmen by the Governor of each State are being followed by additional cooperative steps, including adoption of the ICC transport mobilization orders or compatible standby State emergency transportation orders, designation of emergency assembly and dispersal areas within States, and the designation of local transport officers.

Motor carrier executive reservists have been recruited to serve in emergencies with the ICC board members. The assignment of at least four reservists in each State brings to the board expertise in for-hire property carriage, private carriage, passenger carriage, and motor vehicle maintenance. The motor carrier reservists, as of June 30, 1967, included 208 members appointed and eight nominees in process.

c. *Inland Water Carriers.*—Recruitment of inland waterway reservists at the regional and local levels has continued on an austere basis. A review of assignments at important inland waterway points was effected. This review resulted in the restructuring of the inland water emergency standby organization from a 10-region basis to an eight-region basis, subdivided into 66 inland water districts, with projected staffing by executive reservists and field personnel. The inland waterway group of the National Defense Executive Reserve, as of June 30, 1967, included 43 members appointed and nine nominees in process.

d. *National.*—There were 15 national reservists and four nominees as of June 30, 1967.

2. Continuity of the Agency

Essential records, documents, inventories, and resource materials prepositioned at alternate headquarters sites were supplemented with updated materials during the fiscal year. The Commission's plans for orderly movement of key officials and support staff were revised and updated, with special emphasis on emergency operational considerations.

Periodic tests of agency internal alerting procedures were conducted in conjunction with notifications of simulated Defcon changes provided by the Office of Civil Defense.

3. Emergency Planning and Operations Manual

The ICC Emergency Planning and Operations Manual has been completely revised and updated. The manual has been issued to each field staff member with an emergency designation and to each of the Commission's National Defense

Executive Reserve members. The manual has been provided to other Government agencies with whom the ICC coordinates its planning efforts.

4. Industry Guidance

The Commission and the Association of American Railroads have proceeded on a cooperative basis to develop a current railroad industry emergency preparedness guidance pamphlet.

5. The ICC Transport Mobilization Orders

Revised TM Orders TM–1 through TM–13 have been reproduced and distributed to industry, industry associations, emergency planners, and the State agencies for their information and guidance.

A procedural order, designated TM–11–PO–1, which is designed to alleviate rail traffic congestion at port areas in a national emergency, has been issued. Development of an additional procedural order designated TM–2–PO–1 has been initiated. This order concerns permitting of movements to or from damaged areas.

6. National Emergency Planning Guidance

The commission, during the fiscal year, distributed to newly appointed executive reservists individual copies of the *National Plan for Emergency Preparedness*. This guidance was supplemented by appropriate information and training material regarding the agency responsibilities under the plan.

7. Training and orientation

Regional level training and orientation sessions were held during the fiscal year for the rail element of the Commission's unit of the national defense executive reserve.

Individual Emergency Motor Transport Board meetings were held during the year to review motor preparedness progress. Inland water reservists were advised of the inland water program reevaluation and their suggestions and comments were considered in the reorganization of this effort.

Commission field staff participated during the year in State transportation planning task group activity under the OEP "comprehensive program for the survival of Government and management of resources, resulting in the formal review of 13 drafted State transportation plans.

8. Interagency cooperation and coordination

The Commission, in developing its emergency preparedness plans and programs, continued to coordinate its efforts with the Office of Emergency Planning, the Office of Civil Defense, the Military Traffic Management and Terminal Service (Department of Defense), the Office of Emergency Transportation (Department of Transportation), and other Federal agencies responsible for segments of transportation or having an interest in transportation. Representation was furnished to interagency committees and groups including the Transportation Allocations, Priorities, and Control Committee; the Interagency Emergency Planning Committee; the Civil Defense Coordinating Committee; the Interagency Committee on the National Defense Executive Reserve; and the national supply requirements study group.

Primary and alternate ICC representatives are designated to each of the eight Office of Emergency Planning Regional Preparedness Committees in the field. These representatives are responsible for channeling guidelines, coordinating readiness plans, and maintaining liasion with other agencies of Government and the transportation industries at the regional and State levels. They also serve on the Office of Civil Defense-regional civil defense coordinating boards. Assignments are made to selected field staff members to serve as State level points of contact for State emergency planning task group activity in connection with OEP's "comprehensive program for survival of Government and management of resources. Commission activity in the development and clearance of State emergency transportation plans significantly increased as the State-level task groups progressed in the drafting of definitive State programs.

The Commission has provided support to the National Resources Evaluation Center and furnished applicable transportation library data as it became available.

The objectives for fiscal year 1969 include the following:

a. Complete the review of State transportation plans developed under the OEP comprehensive program and assist OEP and the State transportation task groups in cooperative Federal-State implementation of the plans.

b. Complete the drafting, interagency coordination, publication, and distribution of emergency readiness guidance for the railroad industry.

c. Maintain the national defense executive reserve, assuring continuity of the emergency standby organization; recruit executives to fill vacancies; and appoint approximately 60 members to hold the total on the rolls to no less than 800 as of the close of the year.

d. Maintain the national, regional, and field standby organization of executive reservists and the field staff of the Commission with emergency designations and assignments.

e. Continue participation in regional level seminars or conferences for orientation and training of reservists and ICC field staff with emergency assignment.

f. Provide support to and participate in national and regional exercises designed by OEP to test emergency plans and measures under various assumed emergency conditions.

g. Coordinate the Commission's plans and programs with representatives of the transportation industry, the Office of Emergency Planning, the Office of Emergency Transportation, other transportation agencies, and the military in order to assure practical and effective emergency readiness in the domestic surface transportation area.

Staffing and funding breakdown

With the ever-increasing need for a standby emergency organization, particularly in the field of transportation, the Commission has accelerated its program of recruiting and training reservists to serve in the ICC unit of the national defense executive reserve. An additional workload has been imposed on the Commission by the build-up in the Office of Emergency Transportation and the increasing demands made by that agency, and the impetus given the overall program by the Department of Transportation.

There is also planned for this year a very badly needed campaign to bolster the interest of the transportation industry (all modes) in this activity. With over 800 industry representatives serving in our organization, it is essential that the Interstate Commerce Commission get the needed support to attract reservists of the caliber it now enjoys.

In order to create and maintain an acceptable level of interest and to assure that persons with standby emergency assignments are ready and able to carry out their designated responsibilities, training, and orientation are required. The proposed program calls for ICC reserve participation in all OEP-sponsored national training conferences.

The development of the rail, motor, inland water, and public storage sections to the ODR plan for resources management, including initial drafting of several supporting documents and prototype orders, will be emphasized.

The increase requested for fiscal year 1969 over 1968 is for full-year cost of pay increases authorized by Public Law 90–206.

TABLE OF PROFESSIONAL MAN-YEARS AND OBLIGATIONS

Program objective	Fiscal year 1968		Fiscal year 1969	
	Professionals man-years	Obligations (thousands)	Professional man-years	Obligations (thousands)
1. Support of OEP comprehensive program, State planning efforts, and test and exercise participation				
2. Industry guidance				
3. National defense executive reserve program	2.1	$26	2.1	$26.5
4. Emergency procedures development, NREC liaison, and supply requirements	.4	5	.4	5.0
5. Program direction and coordination	.7	16	.7	16.5
Total	3.2	47	3.2	48.0

FINANCIAL AND PERSONNEL SUMMARY

Obligations by object class	1967 actual	1968 estimate	1969 estimate	Change 1968/1969
25.2 services of other agencies	$60,000	$47,000	$48,000	$1,000
Yearend employment				
Average employment	4.2	3.2	3.2	

Department of Labor

WITNESSES

MILLARD CASS, DEPUTY UNDER SECRETARY OF LABOR

Mr. Evins. We will take the Department of Labor.

Mr. Millard Cass is Deputy Under Secretary of Labor and responsible for civil defense and defense mobilization functions.

Do you have a statement for us?

Mr. Cass. Yes.

General Statement

Mr. Evins. You may submit it for the record and tell us your funding needs, what you have done in the last year and what you propose for the next year.

Mr. Cass. Yes, sir.

(The statement follows:)

STATEMENT OF MILLARD CASS, DEPUTY UNDER SECRETARY OF LABOR

I appreciate the opportunity to present to this committee the emergency preparedness program of the Department of Labor.

For fiscal year 1969, the Department of Labor is requesting $317,000. This is allocated as follows: Office of the Secretary, $93,000; Bureau of Employment Security, $118,000; Bureau of Labor Statistics, $61,000; Wage and Hour and Public Contracts Divisions, $45,000.

In fiscal year 1962, the Department of Labor's expenditures for emergency preparedness and defense mobilization functions were $978,348, and 52 Federal positions were financed by this appropriation. The funds and personnel have been reduced every year to the present maintenance level in fiscal year 1968 of $314,000 and 22 Federal positions, or a percent reduction of 68 and 58 respectively. For fiscal year 1969, we are seeking only $3,000 more—all for mandatory full year costs of the 1967 pay act.

The reason for this progressive reduction is that the Department of Labor was determined to complete its basic preparedness planning as quickly as possible and reduce the Department's role to a maintenance level. While our basic preparedness is not yet consummated, it is nearly enough achieved for the remainder to be done by the level of staff we now have. This will enable us to complete, review, revise, and update our plans and to undertake certain responsibilities resulting from the Vietnam situation.

Executive Order 11000 of February 16, 1962, delegated to the Secretary of Labor authority and responsibility for:

(*a*) Preparing and keeping up to date national emergency plans covering all phases of civilian manpower mobilization. These programs are to provide for effective utilization of manpower resources, including specialized personnel, worker incentives and protection, skill development and training, research, and critical occupations.

(*b*) Developing emergency plans in the fields of wage and salary stabilization and labor-management relations.

The Executive order states that these plans and programs shall be designed to develop a state of readiness for all aspects of national emergency, including attack upon the United States.

In view of the situation in Vietnam and elsewhere in Southeast Asia, as well as in the Middle East, it is especially important that we be prepared for any eventuality. The Vietnam conflict has already resulted in a few shortages of manpower in some occupations and some geographic areas. As a result, the Department of Labor has oriented its manpower training and utilization programs to meeting the present defense needs and the prospective shortages.

In addition, we are monitoring the effect on the civilian economy of the limited callup of Air Force and Naval Air Reservists on January 25, 1968. We want to know these facts in order to assist employers who may experience shortages of skilled personnel as a result of the callup.

Different types of manpower problems occur in different types of emergencies. Some skill shortages can, however, be anticipated in any emergency. To meet present and prospective shortages of skilled manpower, the Department of Labor is continually updating the lists of shortage occupations; promoting increased training for shortage skills and more effective utilization of manpower; studying how to convert jobs, transfer skills and reduce highly technical jobs to more easily learned components; and developing expedited procedures for training of needed workers in emergency situations.

The Federal-State Employment Service system, with its more than 2,200 local employment offices, would administer the manpower program in any emergency—from limited to nuclear war. They must be ready to match workers and needs. In some cases, they might have to operate independently, cut off from State or Federal direction and assistance; hence, their readiness must be built in.

Guidelines have been established for local office operations in a preattack mobilization period, a limited war, and a postattack situation. Streamlined procedures to get needed workers immediately on the job in any emergency have been developed, and prepositioned with each State and local office.

One of the major problems facing the Nation in an emergency would be the logistics of the manpower program—namely, the moving of persons with certain skills to areas where those skills are in short supply. This requires planning and economic intelligence of a high order. It will be essential that we know where the shortages and surpluses of skilled manpower are. Our manpower data have been programed into a computer to make it possible to estimate the availability of workers in various occupations in any emergency in each of some 350 geographic areas and industry requirements for certain types of skills. These data are being expanded and updated continually.

The Department's National Defense Executive Reserve Unit is being doubled in size—from 101 to 200. The reserves are being prepared for emergency service. We have used these training sessions for consultation with these knowledgeable representatives of labor, management, and the public regarding the programs and plans we are developing for emergency use. To be useful and workable, plans must be acceptable to labor and management. Consequently, we consult them to insure that our proposed programs will have their support and cooperation in an emergency.

There will be continued training of executive reservists and the Department staff, both in Washington and the field. Labor-management advisory committees at national and regional levels will be kept informed of changing developments. Complete review and necessary revision of relocation plans, notification systems, and lines of communication and succession are made at least annually so that they are kept in a readiness posture.

Wage and salary stabilization plans for a nuclear war and for a limited war situation are well advanced. They are being coordinted with other economic stabilization planning. In addition, they are being discussed with labor, management, and public leaders to insure that they are practical and effective. The wage stabilization program would be decentralized to the field, and the Department of Labor employees who would be expected to operate it are being continuously trained. Personnel of other agencies who could assist the Department of Labor in carrying out this responsibility are also being identified and indoctrinated.

Our plans for maintenance of effective labor-management relations during national defense emergencies are being developed in consultation with other interested Federal agencies. They are also being discussed with other labor and management.

Mr. Chairman, I shall be happy to answer any question you or members of the subcommittee may have.

NEED FOR DELEGATE AGENCY FUNDS

Mr. CASS. Our total request for this year is $317,000, which is $3,000 more than the current year. The entire amount is for mandatory pay act costs. We have broken this down between the Office of the Secretary and three bureaus.

We have, in the last 6 years reduced this program 68 percent in funds and 58 percent in Federal personnel, while increasing our efficiency because we have made it a standard operating procedure

that, as we finished certain phases of planning, we phased out the personnel and the money. Thus we did not keep coming back and asking for funds for the same purposes. We think we have reached about the level—and that is why we are asking next year for the same amount as this year—necessary in order to keep up the required planning, revising, updating, and so forth.

We have three basic areas of responsibility. Manpower mobilization, wage stabilization, and labor disputes are the three, and we also have to provide economic data both for our own agency and other agencies which use the National Resource Analysis Center. We are constantly updating and expanding the economic intelligence which we feed into a computer, and we are constantly expanding and revising our own procedures in the event of an emergency.

We are doubling our executive reserve program, and we have had, incidentally, very full participation. At the last national meeting we had 70 percent of our cadre from all over the United States—and these are labor, management, educators, arbitrators, public people from all walks of life. We had both the Secretary of Labor and the Under Secretary of Labor meet with them and they are constantly aware of the plans in which we are engaged.

We have also determined as a matter of basic policy that it is essential that our planning be realistic. So we are not just waiting to use these executive reservists if there is a national emergency. We are consulting these executive reservists at all times concerning the plans we are trying to put on the shelf and preposition in the field in order to insure those plans are realistic, practical, workable, and they would have the support of both labor and management in the event of an emergency; because if we had manpower plans, important wage stabilization plans——

Mr. EVINS. One of the real things you need to do and want to do is have available a supply of the skilled labor for particular purposes. Do you have such an inventory?

MANPOWER PLANS

Mr. CASS. We have inventories. I cannot say, Mr. Chairman, that the supply is in all respects adequate. There are shortage occupations which are constantly being filled through the interstate clearance system of the Federal-State employment service system.

Mr. EVINS. As the Army drains off more of our manpower, industry feels the shortage?

Mr. CASS. Yes, sir.

Mr. EVINS. The Army takes first priority. If they cannot recruit them, what does your office do other than the settlement of disputes?

Mr. CASS. There are two ways in which we are helpful. First, we provide economic intelligence to the employers that may be concerned with those shortages that do exist and which are foreseeable in case of emergency.

We have also been helping them recruit and we have been helping them with training. We have a number of training programs in which we have emphasized particularly the shortage occupations and we have——

Mr. EVINS. One of the programs of the Department of Labor is the training program, but that is not confined to an emergency, is it?

Mr. CASS. No, sir; but we are trying to gear that kind of training not only to the needs of today, but also to foreseeable shortages in the event of an emergency or, as are now occurring, as a result of the Vietnam buildup.

There are some of these, of course, as you are aware, occurring and we are trying to emphasize where those shortages are so we do not train people for skills which are not needed in the future.

It is one of the tragedies, I think, of the past that this Nation too often trained people for jobs which were not available after the training was over. And we have had great success in this——

Mr. EVINS. The more training you can do, the better.

I was just trying to pinpoint what your particular civil defense agency does.

Manpower training, $118,000; wage stabilization, $45,000; executive reserve, $93,000; and economic analysis, $61,000.

LABOR'S EMERGENCY RESPONSIBILITIES

Mr. TALCOTT. You deal with labor and we have another section on agriculture and yet there is labor in agriculture. But you're more interested in industry and manufacturing and producing industries than you are in agriculture, I think.

Mr. CASS. Yes and no, sir. You are correct, but we do have the Farm Labor Service in the Department of Labor and we do have responsibilities for meeting the manpower needs of agriculture as well. We work closely with the Department of Agriculture, but the Farm Labor Service is in this Department.

Mr. TALCOTT. Here is an example of where, if we had an emergency, one of the very first industries hit hardest by the drain of manpower would be agriculture. Right?

Mr. CASS. Yes, sir.

Mr. TALCOTT. You do not want to train a lot more people for agriculture because then you would have an excess labor supply when the war is over. So really, one of the best places to obtain agriculture labor during a war emergency is Mexico.

Do you have any plans for the promoting of the importation of foreign workers in emergency-type situations before you start training people for agriculture that do not want to do agricultural work when the war is over?

Mr. CASS. As you know, sir, we have a program now in existence under which small numbers of agricultural workers do come into California, particularly from Mexico. This used to be a very large program. It is very small at the moment, but the exact same procedures which are now employed under the Immigration and Nationality Act are the procedures which could be employed in any emergency.

Mr. TALCOTT. You would do that rather than try to retrain people for agricultural work?

Mr. CASS. I do not want to say we would turn to that as our first source, sir, because we do have a great many former agricultural workers who are now in cities and many of whom have not found employment satisfactory to them or to the economy in the cities. I think in

the event of an emergency need in agriculture that many of these could be induced to return to agriculture.

We are working with the Department of Agriculture this coming fiscal year on one of our programs here to develop a wage stabilization program which would induce people to stay in agriculture or return to agriculture in an emergency. That is one of this coming fiscal year's projects.

Mr. TALCOTT. One moment the Government is trying to keep people from migrating around the country because it is such a miserable, expensive, wasteful way of life, and now we have a program to get them to migrate from the cities back to the farms.

Mr. CASS. This is not a program to do this now, sir; this is a program which would be utilized only in the event of a national emergency.

Mr. TALCOTT. I see.

Mr. CASS. All of our wage stabilization and all of our economic stabilization programs are geared only to a national emergency, and we have made very clear in our consultations with labor and management, and we have met with the National Labor and Management Manpower Policy Committee, on which agriculture is represented, and we have discussed with them this economic stabilization program and made clear to all of them what we are talking about is a national emergency. At the time of an emergency, it is too late to do your planning.

On the other hand, we do not want to plan in peacetime to use the type of economic activity and stringencies that you would impose upon people in an emergency.

Mr. EVINS. Off the record.

(Off the record.)

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages 71 through 76. This shows the statement of the mission, the objectives and the goals for 1969 which Mr. Cass has described.

(The pages follow:)

CIVIL DEFENSE AND DEFENSE MOBILIZATION FUNCTIONS OF FEDERAL AGENCIES, FISCAL YEAR 1969

A. STATEMENT OF MISSION

The basic objectives of the preparedness responsibilities assigned to the U.S. Department of Labor by the President under Executive Order 11000 are to:

1. Insure the availability of an adequate labor force in terms of numbers and skills, and apply such voluntary and other measures, including tentative preattack assignment of manpower for emergency needs, as may be necessary to meet mobilization and civil defense requirements of activities essential for survival and recovery.

2. Develop adequate statistics on the availability of manpower by geographic location and its probable productivity to insure rapid estimation of surviving manpower resources and their capability in an emergency in the event of attack on the United States.

3. Preattack plan for local postattack reporting of manpower supply and demand and adequate wage and price statistics for effective operation of a wage and price stabilization program.

4. Develop procedures and accumulating estimates of manpower requirements and for determining the adequacy of manpower resources to meet these estimated requirements.

5. Develop adequate provisions for a wage and salary stabilization program and its enforcement, and develop optimum procedures for insuring maximum cooperation between labor and management and for solving labor-management disputes.
6. Coordinate the above functions and the Department's emergency planning with that of other Federal agencies.
7. Develop an executive reserve program to meet emergency needs of the Department.

B. NARRATIVE DESCRIPTION OF PROGRAM

Activity 1. Manpower mobilization planning (1968, $117,000; 1969, $118,000).—The Bureau of Employment Security plans for national manpower utilization under all contingencies of possible emergency. A major portion of planning is related to the cooperational procedures by which the manpower agencies work with all Federal, State, and local agencies having other resource responsibilities.

Program objectives for 1968

1. Review and update handbook and manual instructions; introduce new procedures.
2. Promote and assist in development of procedures and programs to meet manpower problems arising from the military and civilian manpower needs generated by the Vietnam buildup.
3. Maintain program for reporting skill shortages and oversupply of workers locally, regionally, and nationally.
4. Continue efforts to increase the use of all workers physically able to perform a task.
5. Continue studies on critical occupations and essential activities. This activity forms the basis for the recommendations to the National Security Council for their use in providing advice to the Selective Service System with respect to the draft deferment program.
6. Continue training of new employees and Department of Labor executive reservists to meet the Nation's manpower needs in an emergency.

Program changes for 1969

In addition to the continuing programs, the following additions may be made:
1. Participate in a program for the local level management of resources in a civil defense emergency. This involves assistance to, and working with, the Office of Civil Defense.
2. Promote establishment of preassigned teams and reconstruction task forces at the local level. Advice and assistance is to be furnished by the local employment offices upon request of local authorities who decide to engage in such emergency preparedness activities.
3. Continue activity regarding critical occupations and essential activities.
4. Promote and assist in development of plans and programs for use of manpower released from military or civilian jobs if hostilities cease in Vietnam.

Changes for 1969

The increase of $1,000 over the 1968 base will provide for annualization of the pay increase costs and related benefits under Public Law 90–206.

Narrative description of program

Activity 2. Economic analysis (1968, $60,000; 1969, $61,000).—Provides economic advisory services to departmental officials for use in developing policies and programs for use in possible emergency situations, including a review of plans for statistical reporting, analysis of labor force information, and preparation of manpower statistics essential for planning. Develops bomb damage assessment procedures for labor force estimation, evolves techniques and prepares data for appraising, on a national basis, feasibility of proposed production goals, and plans statistical surveys for policy guidance on wages, prices, worker productivity and problems relating to the economic impact of proposed emergency programs.

Program objectives for 1968

1. Complete a methodology for use in developing cost factors such as wages, profits, and taxes that are determinants of price movements. Develop data from available sources and specially prepare information developed by use of input-output technique to carry out this procedure in electronics industry.
2. Provide National Resource Analysis Center of Office of Emergency Planning with specialist services on manpower, wages and prices, particularly in con-

nection with use of computer-based economic models for post-attack and limited war problems.

3. Compute civilian defense related employments by industry and occupation for 1966 and effect of Vietnam conflict on manpower requirements by use of computer-based economic model.

4. Develop a technique to provide a geographical distribution of manpower requirements generated as solutions to problems by the OEP computer-based economic model.

Program changes for 1969

1. Complete techniques with necessary data to estimate the effect of wage, profit and tax factors on price movements for metalworking machinery industry, household appliances, food products, etc., machinery, dairy products, screw machine products and electric lighting and wiring industry.

2. Provide National Resource Analysis Center, Office of Emergency Planning with specialist services on manpower, wages and prices, particularly in connection with use of computer-based economic models for post-attack and limited war problems.

3. Update manpower data by industry and 75 occupations to 1970 terms used in the OEP computer-based economic model.

Changes for 1969

The increase of $1,000 over the 1968 base will provide for annualization of the pay increase costs and related benefits under Public Law 90–206.

Activity 3. Wage Stabilization Planning (1968, $44,000; 1969, $45,000).—Develops plans and procedures for wage and salary stabilization and for the national and field organization necessary for the administration of such a program in an emergency, including investigation, compliance, and appeals procedures; deveolps plans and procedures, including organization plans, for the maintenance of effective labor-management relations during a national emergency; and be prepared to implement all appropriate plans developed under this order.

Program objectives for 1968

1. Prepare draft outline of a plan for the maintenance of effective labor-management relations in a national emergency, based on meetings held with the interagency task force appointed to assist the Department of Labor.

2. Develop a wage stabilization manual to house all preattack and post-attack wage and salary stabilization material.

3. Continue work on the development and preparation of the national and regional organizational charts and functional statements of an emergency wage and salary stabilization and labor disputes administration.

4. Initiate work on development of a plan of compensation incentives designed to increase production and effect the mobility of labor in a general war.

5. Develop wage stabilization regulations covering employees engaged in agriculture and employees of the railroad and airline industries.

Program changes for fiscal year 1969

1. Develop plans and procedures, including organization plans, for the maintenance of an effective labor-management relations program in an emergency.

2. Complete the plan of compensation incentives to increase production and effect the mobility of labor in a general war situation.

3. Continue the development of wage stabilization regulations: Completing regulations for employees engaged in agriculture and employees of the railroad and airline industries; initiating the development of regulations covering the construction industry.

4. Review and revise standby regulations for both a general war and a limited war situation, as appropriate, in the light of changing conditions and new concepts for administering wage and salary controls under varying conditions, and to accommodate suggestions received.

5. Continue the in-service training program for Federal employees and Department of Labor executive reservists who would have wage stabilization duties and responsibilities in a national emergency.

Changes for 1969

The increase of $1,000 over the 1968 base will provide for annualization of the pay increase costs and related benefits under Public Law 90–206.

Activity 4. Central Direction and Coordination and Executive Reserve Program (1968, $93,000; 1969, $93,000).—Provides over-all supervision and guidance for

the development and coordination of the Department's emergency plans and programs for civilian manpower mobilization, economic analysis, and wage stabilization planning; coordinates the activities of other Departments and agencies having responsibilities in these areas; and provides for the continuity of operations of the Department of Labor in an emergency.

Program objectives for 1968

1. Provide overall supervision, guidance, and leadership for the development and coordination of the Department's emergency plans and programs. Participate and assist in development of plans for manpower, wage stabilization and labor disputes in a national defense emergency.
2. Participate in the review and development of overall government emergency plans affecting manpower and economic stabilization.
3. Increase the Department's limited war preparedness.
4. Revise and update the emergency chain of command within the Department, and review cadre assignments required by personnel changes.
5. Recruit and orient additional executive reservists and obtain their advice on manpower, wage stabilization and labor disputes plans for an emergency.

Program changes for 1969

1. Provide overall supervision, guidance and leadership for the development and coordination of the Department's emergency plans and programs. Participate and assist in development of plans for manpower, wage stabilization and labor disputes in a national defense emergency.
2. Participate in the review and development of overall government emergency plans affecting manpower and economic stabilization.
3. Maintain the readiness of the Department of Labor for an emergency, including the revision and updating of the emergency chain of command and the rosters of cadre members.
4. Continue to recruit and orient additonal executive reservists and consult them regarding emergency plans and programs in the Department's areas of responsibiilties.

Changes for 1969

No additional funds are requested for fiscal year 1969.

Mr. Evins. If there are no questions, we will congratulate you, Mr. Cass, and wish you good luck in your mission.

Mr. Cass. Thank you very much for hearing us.

Department of Transportation

WITNESS

JOHN L. McGRUDER, DIRECTOR, OFFICE OF EMERGENCY TRANSPORTATION

Mr. Evins. We have the representative of the Department of Transportation. This is Mr. McGruder.

You may proceed with your statement as you wish.

Mr. McGruder. I will be glad to submit the statement unless you would like me to read it.

General Statement

Mr. Evins. We will put the statement in the record.

(The statement follows:)

STATEMENT BY DIRECTOR OF OFFICE OF EMERGENCY TRANSPORTATION JOHN. L. McGRUDER

I am John L. McGruder, Director of the Office of Emergency Transportation. I appear here in support of the Department of Transportation request for appropriations for the Office of Emergency Planning for departmental emergency preparedness functions.

The Office of Emergency Transportation, under the supervision of the Assistant Secretary for International Affairs and Special Programs, provides staff support for the Secretary of Transportation's broad emergency preparedness responsibilities. This Office develops and coordinates overall policies, plans, and procedures for providing, in an emergency, centralized control of all modes of transportation for the movement of all types of passenger and freight traffic and for the allocation of all or part of the civil transportation capacity to meet overall essential civil and military needs.

The program to carry out this broad mission is comprised of three distinct but related tasks. One task involves the collecting and evaluating of information regarding requirements for transport in emergencies and capabilities to fulfill such requirements; a second task has to do with the development of systems for the controlled utilization—or management of transport resources available in an emergency to insure that high priority cargo and passengers move first. The third task involves the creation and maintenance of administrative mechanisms—facilities, organization, procedures and personnel—essential to our opperational readiness.

Our section of the OEP budget submission summarizes our program status. I believe that it evidences our development of at least a minimum posture in each of these three areas and that we have a sound basis for future development. Establishment of the Department of Transportation considerably strengthens that base.

In very brief summary, our 1968 efforts have been directed primarily to accomplishing the further integration of our Federal emergency transportation program consistent with the organization of DoT, to improving the readiness of our administrative mechanisms, and to achieving a major upgrading of our emergency transport requirements and capabilities analyses. Significant progress also has been made in the civil aviation phase of our cooperative emergency preparedness planning with our NATO allies.

For fiscal year 1969 we propose to focus particularly on the preparation of longer range integrated plans for operations of the Federal transport community under emergency conditions, a major upgrading of our emergency transport requirements and capabilities data, further analyses of the most effective means of integrating governmental and private sector preparedness for emergencies affecting U.S. transportation, and the preparation of a comprehensive evaluation of our national preparedness for transport emergencies. In the international area efforts will be concentrated on joint emergency transport planning with Canada and on carying out the U.S. civil transport aspects of the NATO exercise CIVLOG–69.

In closing, I should like to emphasize that OET's role in carrying out the Secretary's emergency preparedness functions involves—to a very considerable extent—the coordinating of the preparedness efforts by the several Federal agencies having emergency transportation responsibilities, and the all-important U.S. transportation industry, whose vast facilities provide the means by which actual movement operations would be achieved; I should add that our work also includes cooperative efforts with the States and at the international level, with, particularly, the NATO community and our Canadian neighbors.

Mr. Chairman, I will be very glad to try to answer any questions which the committee may have.

PREPAREDNESS ROLE

Mr. EVINS. The Department of Transportation is a new Department. This is the Office of Emergency Transportation.

Mr. MCGRUDER. Yes, sir; this is the Office of Secretary of Transportation reporting to the Assistant Secretary for International Affairs and Special Programs.

Mr. EVINS. This is an ongoing program that was transferred into the Department of Transportation.

Mr. MCGRUDER. Yes, sir; from the Office of the Under Secretary of Commerce for Transportation. Actually, it moved, and the personnel moved with Mr. Boyd; we just moved over into a different house.

Mr. EVINS. You have the same functions?

Mr. McGruder. The same functions as far as the OEP interest is concerned.

Mr. Evins. The Office of Emergency Transportation develops and coordinates overall policies, plans and procedures for provision of centralized control of all modes of transportation in an emergency.

Yours is overall supervision whereas the ICC is related to certain areas in transportation?

Mr. McGruder. Yes, sir; we have the same functions and relationships with ICC as we do with the Maritime Administration and the Civil Aeronautics Board. It is our job to coordinate the provision of all civil transport to support a national emergency.

Mr. Evins. Which includes air?

Mr. McGruder. Yes, sir.

Mr. Evins. Inland waterways is one you think you are going to rely on in case of emergency?

Mr. McGruder. We would certainly place a great deal of reliance on them if the activities of World Wars I and II are any indication. There was a great deal of use of the inland waterways at that time, for the movement, for instance, of petroleum by barge.

Mr. Evins. * * * the determination of the proper apportionment and the allocation of the total civilian transportation capacity." How are you going to determine that?

Mr. McGruder. Sir, our overall task breaks down into three parts:

One is what we call the information analysis function. In this we try to find out the most comprehensive picture we can of what is available in the way of transportation, and what the needs are for transportation, of particular interest are the Department of Defense needs to support directly the military effort and what transportation is required to support the civil economy.

Mr. Evins. Do you get into the transportation of the Defense Department?

Mr. McGruder. Not their organic transport, sir. As far as military truck convoys, for instance, we would not enter the picture. We do have a responsibility in connection with civil transport for them. Any civil transport that is provided for the Defense Department usage in wartime comes on the basis of an allocation from the Secretary of Transportation.

Mr. Evins. If the Defense Department wanted to transport troops from the east coast to the west coast, they would call the Department of Transportation and the Department of Transportation would call the ICC?

Mr. McGruder. Yes, sir. And we would also have the function of trying to provide civil air transport, allocating civil air transport for the movement of troops by air—or cargo—as increasingly we develop this capability.

And we could conceivably even move some of them by sea through the Panama Canal.

Mr. Evins. What is the current thinking of the Department of Transportation with respect to the preservation of the railroads or the consolidation and merger or abandonment of the railroads?

Mr. McGruder. Sir, the Assistant Secretary for Policy Development generally speaks to that and develops for the Secretary the basic staff work.

Mr. EVINS. You mention here your overall policy and planning.

Mr. MCGRUDER. As it pertains to defense emergencies. We are asked to make an input to the policy determinations that the Office of Policy Development prepares for the Secretary of Transportation as a draft departmental position.

We make an input as to what the impact would appear to be from a defense standpoint. This is our input. The economic interpretations and so forth would be the role of the Office of Policy Development.

Mr. EVINS. The more abandonment we have, the less lines we have and it appears that the net effect of this would be less availability of transportation for defense purposes.

Mr. MCGRUDER. Not necessarily, sir.

There may be a lesser mileage, but there may be a greater effectiveness of the rail industry to continue to support the overall needs that we have.

One of the problems, sir, is that if the rails fail to make a satisfactory profit, they become weakened and then we could have to provide funds to maintain their transport resources.

Mr. EVINS. Off the record.

(Discusion off the record.)

RELOCATION SITES

Mr. EVINS. You mention here under operational readiness, relocation sites. What are these?

Mr. MCGRUDER. As you know, the Office of Emergency Planning and the Office of Civil Defense have divided the Nation for emergency purposes into eight regions.

We have established eight relocation sites, one in each of these regions, at which that region's emergency transportation center would be located.

Mr. EVINS. You know where you are going to have your center in case of emergency.

Mr. MCGRUDER. Yes, sir.

Mr. EVINS. It is on paper?

Mr. MCGRUDER. We have gone beyond the paper stage. We have the physical facilities in each case, we know where they will be and we have made arrangements in most cases with colleges institutions which we would expect under emergency conditions to largely disband their operations. We would move in on a Government contract for the space and would operate adjacent to the OEP–OCD centers.

Mr. EVINS. What are you going to do with the centers?

Mr. MCGRUDER. We would try to coordinate from there, sir, the resources that survive and are available in the transportation industry. If it were a general war that we are speaking of here with nuclear attack, the first job we would have is essentially a damage assessment job to filter out what is available yet in the way of transportation and we would have to determine how we could make best use of the remaining transportation facilities in order to satisfy the most urgent needs. The centers would have first as their task the development of this information as to what is available in the way of transport—all modes of transport—in the area; we would be working with each area.

Mr. EVINS. You report to the national headquarters that x number of miles of trackage is knocked out, x number of bridges are knocked out, and certain mileage is available?

Mr. MCGRUDER. If there is a national headquarters yet existing, yes, sir. Otherwise, the regions are prepared to operate on their own and, as in the case of ICC, we have an extensive executive reserve with personnel from each one of the transportation industries, rail, motor——

NATIONAL DEFENSE EXECUTIVE RESERVE

Mr. EVINS. The ICC representatives, who just preceded you, said they had the largest number of executives there. You say here you closed 1967 with 274 and an additional 83 are in process. This is for the Department of Transportation?

Mr. MCGRUDER. Yes.

Mr. EVINS. These are in addition to those for ICC?

Mr. MCGRUDER. Yes, sir. There are approximately 1,500 to 1,800 total transportation personnel in the Reserve.

Mr. EVINS. How do these gentlemen choose between ICC and the Department of Transportation?

Mr. MCGRUDER. We are very careful not only not to get crossways with the other Federal agencies, but also not to milk too much any one company. We began to realize a few years ago that some companies were getting very heavily involved and perhaps would not have enough executive personnel left to operate their own companies. As a result, we made some reevaluations, and to a number of people who were in the executive reserve we said, "We are very happy to have you, but probably you are needed more by your company."

There is now a very careful, close check, and in no case do we have too many we believe from any one of the companies.

Mr. EVINS. I am not talking so much about the companies but talking about the mode of transportation. Are these in the railroad, truck industry, or airlines?

Mr. MCGRUDER. Some of each. We have some from air, some from rail and trucking, some from ocean shipping. We have a few from the inland waterway area.

Mr. EVINS. Are you getting in only the older top executives or are you getting in some younger executives?

Mr. MCGRUDER. We are getting both. They range, I believe, the youngest is about 30 and we have several we continue to retain even though they are now nearing 70.

We would expect the roughly 70-year-old men probably would not be going underground, but would be in an elder statesman and guiding role. We are watching very carefully the overall makeup of this group.

Mr. TALCOTT. Your function now is to plan for an emergency in transportation?

Mr. MCGRUDER. Yes, sir, and according to the Executive order, to be capable of implementing those plans in event of actual attack.

Mr. TALCOTT. As soon as the bomb drops, you are not the planner any more, you are the head of the transportation system of all the United States?

Mr. McGRUDER. Yes, sir, the Secretary is. We would then look to the executive reserve to give us an immediate industry capability. We have at least one or two training sessions a year with our executive reservists. We are just beginning our spring series, in the next 3 months—between now and the 16th of May—we will have about a day and a half in each of the eight regions.

Mr. TALCOTT. Do you need a separate Executive order to take over or will one order come at one time?

Mr. McGRUDER. There are a series of Executive orders that could be implemented, standby orders available for use in the event of an emergency. Certain of our activities would not require any additional Executive orders, certain of them would, and we could implement only those activities, of course, for which there was authority.

Mr. TALCOTT. So all of those executive reservists are volunteers now. Do they have any commitment when the bomb drops?

Mr. McGRUDER. They have a commitment, sir; yes, sir. But if they do not show we can't really do anything to them.

Mr. EVINS. They are patriots.

Mr. McGRUDER. Yes, sir.

Mr. TALCOTT. If some reservist is working for the Southern Pacific, and he says, "The heck with it," there is nothing you can do? His training is wasted?

Mr. McGRUDER. Not much we can do about it, but I should explain that, not only are these individuals themselves, as the chairman has said, patriotically inclined, but their agency or company has signed a waiver also on their services. So it is a combined effort of the Government appointing and the individual accepting appointment with the approval of his employer.

Mr. TALCOTT. And their wages would be continued on by their own company?

Mr. McGRUDER. This would vary, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. Mr. McGruder, you have an interesting statement here of your objectives and the things you are doing.

We will place in the record pages 87 through 93.

(The pages follow:)

CURRENT STATUS—SUMMARY OF PROGRESS THROUGH 1967

A. OPERATIONAL READINESS

1. *Relocation sites.*—Agreements have been consummated in all of the OEP regions providing for facilities to accommodate regional emergency transportation centers in the event of a national emergency.

2. *Organization and staffing.*—Emergency transportation regional directors and deputy directors have been designated for each of the eight OEP regions and job descriptions have been prepared for all major positions in both national and regional emergency organizations.

3. *Executive reservists.*—Certified by the close of fiscal year 1967 numbered 274 with an additional 83 in process for a total of 357 for the first 4 years of the OET program.

4. *Training.*—Training conferences for mobilization personnel—both Federal employees and executive reservists—have been held in each of the past 2 years in each of the eight regions and for the national headquarters staff.

5. *Emergency operating procedures.*—In the spring of 1967, when the Department of Transportation was established, an interim set of emergency action documents—"The Red Book"—was distributed to top staff. Draft emergency preparedness manuals for both headquarters and regional relocation sites had been circulated by the close of the year and were awaiting publication.

6. *States.*—Of the 52 States and speical jurisdictions which had signed contracts as part of the OEP comprehensive program, a total of 50 had by close of fiscal year 1967, submitted draft plans for transportation in an emergency; of these 33 had received approval and 20 had been published.

B. RESOURCE MANAGEMENT

1. Preliminary ("rough cut") estimates of U.S. requirements for civil transport and of civil transportation resources available to the United States have been prepared for the international tension, limited war and general war contingencies.

2. A manual for an integrated system for analyzing emergency damage to and remaining capabilities of U.S. transportation resources had been drafted and was awaiting interagency coordination at year's end.

3. Preliminary guidelines had been drafted for transportation agency claiming of manpower, materials, etc., needed to rehabilitate and/or support U.S. transportation resources in an emergency.

4. A draft procedural manual for the control of all modes of transportation has been written and revised; however, because of certain inherent deficiencies in the general approach, individual modal manuals will be issued, the first two of which—air and ocean shipping—were distributed for comment in the last quarter, fiscal year 1967.

5. Allocations of air carrier civil aircraft in support of CRAF, WASP and other essential-use programs have been maintained in current status. The CRAF fleet consisted of 376 aircraft at the end of fiscal year 1967.

6. Emergency transportation research has produced 10 published and more than 100 unpublished studies.

1967 highlights

1. With establishment of the Department of Transportation we have initiated a major review of the emergency transportation planning organization and facilities; this review will be completed in fiscal year 1968 and action begun on the resulting recommendation.

2. A comprehensive and integrated plan for the management of U.S. transportation resources under the limited war contingency was prepared. Although a number of yearend deadlines were missed, by the close of fiscal year 1967 work on the projects targeted for fiscal year 1967 had been largely completed.

3. Coordinated estimates of requirements for transportation and capabilities of U.S. transport resources under each of the contingency conditions of international tension limited war and general war have been completed.

4. Nondefense emergencies impacting on transportation (such as natural disasters and work stoppages) have begun to receive substantially increased attention with Department of Transportation Assistant Secretary Agger personally emphasizing this activity.

5. To establish optimumly practicable procedures for emergency transportation operations—and to clarify areas of possible conflict or misunderstanding—pilot projects have been begun with the States of New York and Virginia to define the Federal and State roles in transportation emergencies.

6. International efforts in the emergency transport field have been given greater support consistent with U.S. interests:

a. NATO's Civil Aviation Planning Committee has undertaken a major step-up in its preparedness efforts.

b. United States-Canadian joint emergency planning in the transport field has received renewed attention.

7. Efforts were stepped up to achieve broader understanding of—and participation in—the emergency transportation program by both public and private entities. A joint program with the National Defense Transportation Association is the principal result to date; nationwide briefings have been given and a series of published articles will begin in October.

8. In connection with the NRAC data bank, a coordinated plan was developed for the broadening and upgrading of transportation information and initial inputs were made.

9. A simple technique for updating estimates of requirements for transport in emergencies and transport resources in emergencies was completed.

Objectives proposed for accomplishment during fiscal year 1968

1. Complete estimates and comparative analyses of requirements for, and capabilities of, U.S. transport resources under limited war conditions—by origins—for both domestic and international movements.
2. Complete programed transportation inputs to the NRAC data bank and continue to seek support for surface modes input to NRAC data bank.
3. Initiate (with Federal transportation agencies) the transportation section of the OEP/ODR "resource mobilization plan for general war."
4. Maintain and upgrade the OET unit of the national defense executive reserve.
5. Continue to seek support for a study to determine feasibility of developing a transportation network model to optimize the utilization of available transport resources in emergencies.
6. Continue development of systems and procedures for the control, as required, of all forms of civil transportation under varying degrees of emergency.
7. Develop, in cooperation with other interested U.S. agencies, a U.S. proposal for a basic work program with Canada to achieve in 1969 an initial comprehensive U.S./Canada joint plan for emergency transport.
8. Coordinate U.S. inputs to the development of NATO CAPC/BOCCA plans for civil aviation.
9. Continue pilot projects with two or three States to clarify Federal and State emergency roles in the transportation area.
10. Initiate preparation for U.S. transportation participation in CIVLOG 69.
11. Review and revise as appropriate existing major preallocation arrangements (i.e., Wilson-Weeks, CRAF, Nitelife, etc.) in light of Department of Transportation establishment.
12. Provide support to OCD/OEP local planning program.
13. Develop transportation portion of national supply-requirements study for review of the Nation's limited and general war strategic materials stockpile program.
14. Complete estimates and analyses of transportation, requirements and capabilities by mode, for the general war contingency—on a gross national basis (assuming receipt of DOD requirements by January 1968).
15. Complete OET review of State plans submitted under OEP "comprehensive program".
16. Develop more fruitful relationships with the transportation industry to obtain its broader participation in the emergency transportation program.
17. Continue study with Industry Evaluation Board of vertical analysis of transportation industry.
18. Publish (a) claimancy procedures manual, preliminary edition, and (b) preparedness manual for national and regional emergency transportation center.
19. Participate, as appropriate, in OEP/OCD exercises.
20. Prepare an evaluation report on preparedness posture of U.S. transportation complex.
21. Develop a comprehensive and integrated 5-year preparedness program for the Federal transportation community.
22. In connection with nondefense emergencies, work to define the appropriate Federal role in such emergencies which impact on transportation services.
23. Carry out such other studies and/or activities as may be required by OEP undertakings.

Objectives proposed for accomplishment during fiscal year 1969

1. Develop standards and/or criteria for evaluating preparedness for transportation emergencies of primarily involved governmental and industry entities.
2. Prepare an evaluative report on the Federal transportation community's preparedness for emergencies.
3. Review and update the 5-year preparedness program of the Federal transportation community.
4. Develop and promulgate policy on relocation facilities for Federal transport agencies.
5. Study and report on special emergency transportation problem areas arising out of geographic location.
6. Define role of DOT/OET with respect to warehousing and freight forwarders.

7. Define role of private motor carrier's transportation in emergencies and appropriate controls over their utilization.
8. Develop with agencies improved liaison and mechanisms for obtaining requirements and capabilities data.
9. Direct and coordinate civilian transport agency support of Civlog 69 and related tests and exercises.
10. Maintain and upgrade the OET element of the NDER.
11. Coordinate preparation of transportation annex to the OEP/ODR "resource mobilization plan for general war."
12. Review and upgrade the publication "Manual Transportation Damage Assessment Procedures."
13. Complete analyses of transportation requirements and capabilities for limited war contingency in 1970–75 time period.
14. Complete programed inputs to the NRAC data bank.
15. Publish an initial comprehensive guidance document on Federal Government emergency control procedures in the transportation field.
16. Complete studies:
    a. Supply requirements of critical materials for limited war.
    b. Vertical analyses of rail and motor carrier industries.
    c. Capability of railroad industry to react to national defense needs.
    d. Manpower requirements essential to emergency transportation operations.
17. Develop with transportation industries joint programs to enhance emergency preparedness.
18. Complete review and updating, in light of DOT establishment, of interagency arrangements for preallocation of civil transport capacity.
19. Develop and publish an operational "Claimancy Procedures Manual".
20. Complete development of U.S. assigned portion of the NATO CAPC/BOCCA War Manual.
21. Develop program for improved integration of NATO's, PBOS, PBEIST and CAPC activities.
22. Coordinate U.S. activities under joint U.S./Canada program for emergency preparedness in the transport field.
23. Make continuing case-study analyses of effects on transportation of major nondefense emergencies.
24. Develop Federal guidance materials regarding transportation in nondefense type emergencies.

APPROPRIATION REQUEST

Mr. EVINS. You are asking for 11 jobs and $207,000.

Mr. MCGRUDER. Yes, sir.

Mr. EVINS. That is a $2,000 increase over last year, and you testify this is due to the pay increase?

Mr. MCGRUDER. That is true, sir.

Mr. EVINS. Is the amount which you are requesting all-inclusive for emergency preparedness for the Department of Transportation, or will an additional amount for this purpose be in the DOT budget elsewhere?

Mr. MCGRUDER. There is an additional amount in the DOT budget, sir.

Mr. EVINS. How much?

Mr. MCGRUDER. Actually, if we are talking only about my own office, the Office of Emergency Transportation—

Mr. EVINS. We know what yours is for. What is the other amount for?

Mr. MCGRUDER. I want to explain that in the Department of Transportation budget we have put in for some funds for my own office.

Mr. EVINS. You figured you could not get enough here?

Mr. McGRUDER. This is to cover certain emergency responsibilities of the Secretary. If there were no Office of Emergency Planning, with Executive Order assignments the Secretary would still have certain responsibilities for the continuity of Government in his Department. This is something we believe should not——

Mr. EVINS. Why do you fragment these funds and have duplication?

Mr. McGRUDER. This is not really duplication, sir. And this preparation follows the guidance that we received.

Mr. EVINS. These funds are supposed to be handled through this committee and you should not be putting some in the DOT budget and some in this budget, too.

FUNDING OF PROGRAM

Mr. TALCOTT. Governor, you should be able to answer that question then.

Is this true of all of the other people who have testified before us? Do they have something hidden in their other budget?

Mr. PEABODY. I cannot answer that question directly, Congressman. I do know, as Mr. McGruder has testified, the Secretary has other responsibilities above and beyond what are strictly emergency planning responsibilities, which in turn however, supplement what they are doing in emergency planning as well as performing the duties required under their different departments.

Mr. RICE. Presidents Kennedy and Johnson issued some 31 Executive orders to different departments and agencies on how each agency of Government should build into its peacetime structure capabilities to respond in an emergency. So our whole concept over the years has been directed to OEP being less and less doers and getting the detailed work done out in the agencies.

So diffused throughout any agency, there is bound to be on a part-time basis, a lot of emergency preparedness work. In other words, people may have as an inherent part of their duty perhaps 10 percent of their time devoted to preparing for emergencies. There are only eight agencies represented in this budget. There are many, many agencies with preparedness responsibilities.

Mr. McGRUDER. We have not felt we could ask the OEP to fund for the Secretary's carrying out his own responsibilities that he would have if there were no Executive orders to him.

Mr. EVINS. Next year see if you can pull it all together. Whether you are asking for it or not, put a chart in showing the overall picture.

TOTAL DEPARTMENT OF TRANSPORTATION REQUEST

Mr. McGRUDER. I would be glad to submit for the record our total request.

Mr. EVINS. Yes, supply that for the record. Thank you.

(The information follows:)

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF EMERGENCY PLANNING,
Washington, D.C., April 1, 1968.

Hon. JOE L. EVINS,
Chairman, Subcommittee on Independent Offices and Housing and Urban Development, Committee on Appropriations, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request on March 7 when, during your subcommittee hearings on the Office of Emergency Planning budget, you asked for a letter setting forth the total 1969 budget request of the Department of Transportation for defense mobilization and other civil emergency programs.

Essentially, DOT proposes to continue the funding arrangements which have existed since before the Department was established last year.

First, the broad intermodal emergency transportation responsibilities assigned by Executive Order 10999 to the Office of Emergency Transportation (a unit transferred last year from the Department of Commerce to the Office of the Secretary, DOT) will continue to be financed by the OEP appropriation "Civil Defense and Defense Mobilization Functions of Federal Agencies." This is the 11-position, $207,000 item which you and your committee discussed with Mr. John McGruder on March 7. The amount involved is essentially the same as that appropriated for fiscal year 1968, and is approximately 12 percent below that appropriated for fiscal year 1967.

Second, emergency programs of the Federal Aviation Administration and the Federal Highway Administration will continue to be financed directly by DOT funds.

Specifically, a request for 35 positions and $686,500 is in FAA's "Operations" appropriation for functions which have been financed directly by FAA in the past, functions which spring directly from that agency's statutory responsibilities.

Historically, funds have been provided directly to the FAA and its predecessor agency, the CAA, to carry out its defense readiness activities. The Federal Aviation Act assigned specific responsibilities to the Administrator, in consultation with the Department of Defense, to assure that appropriate joint plans are provided for (1) the continuous operation of the national airspace system of air traffic control, navaids and aeronautical communications required for the support of military operations during a war or national emergency, (2) maintenance of executive direction and control of the agency's essential emergency support of military operations, and (3) postattack capability for support of essential air operations, civil and military.

Likewise, FHWA will continue its funding arrangements established prior to the creation of DOT by its request for six positions and $103,000 in the highway trust fund's limitation on general expenses.

Thirdly, for the first time DOT is requesting fiscal year 1969 funds ($11,000) in DOT's regular S. & E. appropriation to finance one position in the Office of the Secretary, DOT. This position—designated as a departmental readiness officer—is the position Mr. McGruder alluded to in your hearings when he stated that "We have not felt we could ask the OEP to fund for the Secretary's carrying out his own responsibilities that he would have if there were no executive orders to him."

You may be aware that the House report on the 1968 DOT appropriation bill denied funds to support emergency planning activities in FAA and FHWA on the basis that such activities should be funded by OEP. We are advised that the Department appealed this reduction to the Senate, noting that the amounts for these administrations had not been included in OEP's original budget request. The Senate and the conferees on the DOT bill restored a portion of the House reductions, but were silent on the matter of financing emergency preparedness activities. In view of this and the fact the OEP's final appropriation was obviously insufficient to cover the costs of FAA and FHWA's activities in this area,

the Department continued the prior funding pattern in 1968. As noted earlier, the Department is proposing the same financing arrangements in 1969.

We hope this is responsive to your inquiry. If you need additional information, we would be happy to provide it.

Sincerely,

WILLIAM B. RICE,
Director of Administration.

TREASURY DEPARTMENT

WITNESSES

FRED B. SMITH, GENERAL COUNSEL
EDWARD J. HEID, CHIEF, MOBILIZATION PLANNING STAFF

Mr. EVINS. Next we will call our friends from the Treasury Department. We have Mr. Fred Smith, General Counsel, and Mr. Edward J. Heid, Chief, Mobilization Planner to the Treasury.

Do you have a statement, Mr. Smith?

Mr. SMITH. Yes, sir, Mr. Chairman.

GENERAL STATEMENT

Mr. EVINS. We will put it in the record.

(The statement follows:)

Mr. Chairman and members of the committee, the budget estimate under consideration includes funds in the amount of $68,000 to continue a preparedness program in the Treasury Department during the fiscal year 1969.

Our preparedness program is designed to insure a state of readiness to carry out essential monetary and financial functions in the event of a national emergency, including attack upon the United States. Such functions include the regulation of banking institutions; foreign assets control; revenue collection; debt management; manufacture of currency and coin; issuance of Treasury checks; a central Government accounting and financial reporting system; administration of customs laws and tax laws; suppression of counterfeiting; and other related activities.

To achieve our objective we have developed emergency banking regulations which have been distributed to banking institutions.

Documents have been prepared providing the broad elements of a postattack indemnification plan.

Procedures have been developed providing for the Federal Reserve banks to perform certain monetary and financial functions, if conditions require.

And various documents have been drafted to provide additional necessary authority in a postattack period.

In addition, emergency delegations of authority and orders of succession have been issued; relocation sites for performing essential functions have been established; employees having emergency assignments have been designated; and provision has been made for the safekeeping of records and documents essential for emergency operations.

Treasury's emergency preparedness program is conducted on an austere basis. Whereever possible, emergency preparedness work is merged with regular day-to-day assignments.

The funds requested provide for a staff of four employees in the Office of the Secretary to handle the necessary departmental guidance and coordination of preparedness matters throughout the Department. The staff serves as liaison with the Office of Emergency Planning; reviews and digests information preparatory to the issuance of instructions for the various bureaus and offices of the Department; and maintains preparedness plans on a current basis. To assure the coordination and effective operation of field activities, an emergency regional plan is maintained which provides for representatives to relocate to each of the eight Federal operating centers, in the event of a national emergency.

We will continue to assist in the development of overall national emergency material, and cooperate with other agencies of the Government on mutually related matters.

Mr. EVINS. Off the record.

(Discussion off the record.)

TREASURY'S EMERGENCY RESPONSIBILITIES

Mr. EVINS. Back on the record.

The Secretary of the Treasury is responsible for the development of these authorities, plans, and procedures for use in the execution of certain emergency monetary financial and economic functions in accordance with Executive Orders 10346 and 11088, and policies contained in the national plan for emergency preparedness.

He is also responsible for maintaining a continuing capability to respond to the economic consequences of mobilization. More specifically, he is responsible for:

(1) initiating, developing, prescribing, and coordinating appropriate monetary credit, tax, and other financial policies.

We know that is what he does all the time. He develops proper policies.

(2) maintaining plans for implementation of emergency banking regulations. They have been doing that for years. They send out to the banks and say have duplicate copies made of all of your records.

(3) participation in the development and coordination of overall economic stabilization policies. We need a little stability now, and maybe the tax bill would help toward that.

(4) maintaining preparedness programs with respect to the collection of revenue, production of coin and currency, issuance and payment of Treasury checks, and maintenance of the central Government accounting system.

According to your justification, this is your mission. Now go ahead and tell us what you have done last year, what your goals are for next year, and how much money you need to accomplish these goals.

Mr. SMITH. We are requesting $68,000 for a staff of four people, which is the same as last year. The amount is $4,000 more than fiscal year 1967, which is accounted for by increased personnel costs.

Our program now is largely to maintain and coordinate and update and train new relocation cadre and keep in a constant state of preparedness to do our mission. We have done a couple of things substantively in the last year. We have one problem that we are working on, we have a study going on, which we are doing with our own in-house capacity. You asked me about what we have accomplished since last year. One of the things we have accomplished, we have solved the coin shortage. We have plenty of coins in this country. The vaults of all the Federal Reserve Banks all over the country are full of coins. So there is no problem there of a coin shortage. I think that is one of the things we discussed last year.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. TALCOTT. You don't see many 50-cent pieces around.

Mr. SMITH. The half dollar is a problem, but they are not an essential coin for the economy. Two quarters work just as well.

Mr. TALCOTT. Pennies aren't good any more, either.

Mr. EVINS. They are all good if you can get a hold of them.

Mr. SMITH. Do you mean they are in short supply or they do not look as well?

Mr. TALCOTT. Well, you need nickels, you don't need pennies.

Mr. SMITH. Another thing that has been produced in the last year is a study on alternative methods of taxation in the postattack period. That has been also produced largely by our in-house capacity and not by the staff that is funded through this amount. In other words, they are people that work that in with their other functions. We have a study that is going on, as our debt analysis staff can work on it, on coordinating the various credit programs of the departments and agencies of Government in the postattack period.

Last year we had hoped to be able to hire an economist to do that study. It would have been produced faster. With the reduction of funds we were not able to do that. So we are working along on this, as we can, along with our manifold other problems with which you are aware.

Our debt analysis staff is pretty busy right now, as you know. But largely the money we are asking for is to maintain and to keep current with developments, with new assumptions we get from OEP and train our relocation cadre both here in Washington and in the eight regions. Now, there is a turnover there. They have to be trained. Mr. Heid and his staff perform that function, largely.

Mr. EVINS. You will be continuing what you have been doing for the last several years?

Mr. SMITH. Yes.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place pages 96 through 101 into the record.

(Pages 96 through 101 follow:)

STATEMENT OF MISSION

The Secretary of the Treasury is responsibile for the development of the necessary authorities, plans and procedures for use in the execution of certain emergency monetary, financial and economic functions in accordance with Executive Orders 10346 and 11088, and policies contained in the National Plan for Emergency Preparedness and other documents. He is also responsible for maintaining a continuing capability to respond to the economic consequences of mobilization. More specifically he is responsible for:

a. Initiating, developing, prescribing, and/or coordinating appropriate monetary, credit, tax, and other financial polices and actions for any emergency;

b. Maintaining plans for implementation of emergency banking regulations, including appropriate delegation of authority to other Federal financial agencies;

c. Participation in the development and coordination of overall economic stabilization policy;

d. Maintaining preparedness programs with respect to the collection of revenue, the production of coin and currency, issuance and payment of Treasury checks, maintenance of the central Government accounting system, and the administration and enforcement of various Federal laws, including those pertaining to customs, narcotics, taxes, and counterfeiting.

CURRENT STATUS

Emergency preparedness is maintained on an austere basis. The necessary departmental direction, guidance and stimulus to maintain a readiness posture is provided through means of a small, full-time departmental staff and a steering committee. Whenever possible, emergency preparedness work is merged with regular, day-to-day assignments. The various bureaus within the Department have no employees working full time on the emergency preparedness program.

In the event of an extreme national emergency, a variety of immediate actions would be required to maintain the economic stability of the nation and to assure the continuity of essential functions. To this end the following significant measures have been accomplished.

Regulations relating to the monetary, banking, and credit system, which provide guidance to deal with problems in this area immediately following a nuclear attack, have been distributed to banking institutions, and prepositioned at relocation sites.

Documents have been prepared and prepositioned which provide the broad elements of an indemnification plan, an identification and discussion of the problems involved in loss sharing, and a comprehensive presentation of the range of detailed alternative plans which might be considered within the framework of existing policies and agreements.

Procedures have been developed so that certain monetary and financial functions would be performed by Federal Reserve banks, if conditions required.

Emergency tax proposals for a postattack economy were developed during the past year.

The Secretary and in turn, the heads of all Treasury bureaus have delegated authority downward to facilitate independent operation if communications are disrupted due to an attack, and lines of succession have been established to all positions of leadership throughout the department.

An emergency operating facility is maintained for national headquarters offices that will minimize the effects of a nuclear attack. Employees having emergency assignments at the relocation site have been notified and are indoctrinated regarding overall emergency preparedness plans.

An alerting system is maintained for notifying officials of defense readiness conditions.

Essential records are maintained at relocation sites.

The geographical spread of Treasury field offices and the emergency relocation plans of primary field offices offers a good chance for the survival of knowledgeable manpower at that level. To facilitate field operations in a postattack period, a Treasury regional mobilization coordinator has been designated for each of the OEP/OCD regional operating centers, and he together with bureau representatives from each functional area in the field would relocate to the regional operating centers in an emergency.

The 5-year program

As long as the likelihood of nuclear attack on the United States is a threat, assurance will be needed for the continuance of essential functions in the event of such an attack.

Treasury's long-range objective is to maintain and strengthen its capability to perform the monetary, financial, banking, and related functions for which it is responsible, and cooperate with the Office of Emergency Planning and other Federal agencies to improve the capability of the Government to respond to a national emergency.

The emergency preparedness program is projected on a minimal basis to assure continued updating and constant readiness of emergency plans.

Program objectives for fiscal year 1969

To assure continuity of essential operations at the national and field levels in an emergency, a readiness posture will be maintained by pursuing the following major objectives:

1. Prepare a draft plan for the effective coordination of postattack credit activities of Federal departments and agencies having procurement and resource allocation responsibilities. Such a plan is designed to identify the specific credit roles of such agencies as Agriculture, Commerce, Health, Education and Welfare, Interior, Housing and Urban Development, Veterans' Administration, et cetera, and would contain specific authority, procedures, and measures governing the extension of credit under emergency conditions.

2. Develop emergency regulations and instructions providing for additional authority to paying agents with respect to redemption of U.S. savings bonds in order to permit beneficiaries in simple death cases to obtain funds more readily, as well as to decentralize the workload from Government to commercial banks.

3. With OEP and other appropriate Federal departments and agencies, review, refine and update the recently completed plan for a Federal cash grant system following a major nuclear attack on the United States.

4. Provide departmental direction, assistance, appraisal, and stimulus for the guidance of offices and bureaus in maintaining a readiness posture at all operating levels.

5. Maintain the comprehensive readiness plan for the department in a current status, including a system for notifying appropriate officials of defense conditions.

6. Maintain the national headquarters relocation site, together with its emergency communications center, including continuous training of communications operators.

7. Conduct periodic seminars for Treasury field officials who have emergency assignments at the eight Federal regional emergency operating centers.

8. Encourage completion of emergency operating procedures where necessary.

9. Provide appropriate departmental representation on emergency preparedness matters.

PROFESSIONAL SUMMARY OF MAN-YEARS AND OBLIGATIONS

Program objective	Fiscal year 1968		Fiscal year 1969	
	Professional man-years	Obligations	Professional man-years	Obligations
1. Development and maintenance by Federal financial agencies of a State of readiness to carry out financial, monetary and credit policies and programs under emergency conditions	4	$68,000	4	$68,000

END-YEAR EMPLOYMENT

Position	Location	Grade	End-year employment		
			Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Chief, mobilization planning staff	Washington, D.C.	16	1	1	1
Mobilization planning officer	do	14	1	1	1
Mobilization planning specialist	do	12	1	1	1
Secretary	do	7	1	1	1
Totals			4	4	4

OBJECT CLASSIFICATION

[In thousands of dollars]

	1967 actual	1968 estimate	1969 estimate
Personnel compensation: Permanent positions	59	62	62
Personnel benefits	4	5	5
Travel and transportation of persons	1	1	1
Total obligations	64	68	68

Mr. EVINS. Thank you very much, gentlemen. Do you have any statement?

Mr. PEABODY. No; we thank you very much for your courtesy to us, Mr. Chairman.

Mr. EVINS. Mr. Heid, we did not call on you for any comments. I think you ought to make a statement for the record.

Mr. HEID. I think Mr. Smith answered all the questions to your satisfaction and I will let the record stand, Mr. Chairman.

Mr. SMITH. If I may add, we have a steering committee in Treasury with several of our second level officers. This is a means by which Mr. Heid communicates to us things we ought to be doing in the Department and by which the senior officers of the Department are kept current on our program, and he does a good job.

Mr. EVINS. I am sure he does. Thank you very much, and good luck to you.

WEDNESDAY, MARCH 6, 1968

DEPARTMENT OF DEFENSE

Office of Civil Defense

WITNESSES

JOSEPH ROMM, ACTING DIRECTOR OF CIVIL DEFENSE
HUBERT A. SCHON, DEPUTY DIRECTOR OF CIVIL DEFENSE
MRS. JANE FIQUET HANNA, DEPUTY DIRECTOR OF CIVIL DEFENSE
ROBERT E. YOUNG, EXECUTIVE ASSISTANT TO THE DIRECTOR OF CIVIL DEFENSE
TROY V. McKINNEY, COMPTROLLER
JOHN W. McCONNELL, ASSISTANT DIRECTOR FOR PLANS AND OPERATIONS
WALMER E. STROPE, ASSISTANT DIRECTOR FOR RESEARCH
REN F. READ, ASSISTANT DIRECTOR FOR TECHNICAL SERVICES
EDWARD S. JOHNSON, DEPUTY COMPTROLLER
JACK RASKIN, DIRECTOR, BUDGET DIVISION
FREDERIC E. STEVENSON, DIRECTOR, PROGRAM DIVISION

Mr. EVINS. The committee will please come to order.

We have with us this morning officials of the Office of Civil Defense headed by Mr. Joseph Romm, Acting Director of Civil Defense.

Mr. Romm, glad to see you looking so well. We are always pleased to hear you. Put your full statement in the record and highlight it, or proceed as you wish.

Mr. ROMM. I have a statement from the Secretary of the Army which is only three pages long and if I could impose upon you, I would like to read his statement.

GENERAL STATEMENTS

Mr. EVINS. Why don't you file his statement and yours?

The two statements will be included in the record.

(The statements follow:)

STATEMENT OF THE SECRETARY OF THE ARMY

Mr. Chairman and members of the committee, I appreciate the opportunity to provide a statement for the record to this committee in support of the civil defense program.

The President's budget request for fiscal year 1969 is for $77.3 million, 10 percent below the fiscal year 1968 appropriation, and 24 percent below the fiscal year 1967 appropriation. This reduced request is designed to maintain the civil defense program at a level which retains the increased capabilities added during the past several years; capabilities which contribute significantly to our strategic defense posture.

Over the past 6 years we have developed on an orderly basis a substantial civil defense capability at all levels of Government. Through the maximum use of existing resources, both physical and organizational, a capability exists to increase measurably the likelihood of survival if a nuclear attack were to occur today. It is our intention to maintain the current civil defense objectives and be prepared to accelerate the programs as strategic decisions require.

This reduced request is made in recognition of the priorities set forth by the President in his fiscal year 1969 budget message. As he stated, it is necessary to establish priorities in the application of our resources as we cannot do everything we would wish to do. In our evaluation of current overall defense requirements and financial impact, we concluded that some civil defense activities could be delayed or deferred pending the end of the Vietnam conflict without sacrificing

vital national objectives. This in no way denies the value of these deferred activities nor does it downgrade the civil defense contribution to our overall defense posture. Rather it defers activities that can be accomplished later without substantial loss.

Administration policy has consistently emphasized the complementary relationship of active defenses and civil defense measures. The Secretary of Defense, in his posture briefings, has stated that deployment of a large-scale ballistic missile defense system would of necessity be accompanied by an expanded and accelerated civil defense program. With the announcement, last September, of the decision to deploy the Sentinel antiballistic missile system some question arose about the impact of the decision on our civil defense program. To make clear the relationship of the Sentinel deployment to civil defense, I would like to reiterate the primary objective of the Sentinel system.

During the past 2 years, the Chinese Peoples Republic has demonstrated significant progress in the development of nuclear weapons and ballistic missiles for their delivery. Projecting the growth of this capability into the future, our best estimates indicate a Chinese potential to attain a capability for a relatively small nuclear missile attack on the Continental United States by the mid-1970's. It is in recognition of this potential threat that the decision was made to deploy the Sentinel system.

Our recent civil defense programs have, however, been based on protection in much more severe Soviet attacks. We have included in our civil defense studies, analyses of the contribution of the current and expanded fallout shelter programs, coupled with the Sentinel system, to a damage limiting capability against potential Chinese attacks. The results of these studies indicate that neither expansion nor acceleration of the current fallout shelter program is necessary because of the deployment of Sentinel.

This conclusion, however, does not negate the consistent results of our studies, specifically that an expanded national civil defense system would make a major contribution to the protection of the population against a heavy attack—the level of attack the Soviet Union is capable of launching.

The budget before you has been carefully constructed, taking into account deferrable activities which in total represent a reduction from the relatively low fiscal year 1968 appropriation. As noted by Secretary McNamara in his current posture briefing, we consider this budget to be the lowest possible sustaining rate for the Federal civil defense program, and I urge your favorable consideration and support of the entire amount in the civil defense budget request.

Mr. Romm, the Acting Director of Civil Defense, will present the detailed justification for this budget request.

STATEMENT BY JOSEPH ROMM, ACTING DIRECTOR OF CIVIL DEFENSE, DEPARTMENT OF THE ARMY

Mr. Chairman and members of the committee, I appreciate the opportunity to appear before your committee to report on our continuing progress and our program proposals for the next fiscal year. Since my last appearance before you, there has been a decision to deploy the Sentinel antiballistic missile system designed to meet the potential Chinese threat of the mid-1970's time frame. The Secretary of the Army has requested me to submit his statement for the record which deals with the relationship of that decision and other considerations to the level of the civil defense budget request for fiscal year 1969.

The civil defense mission is to save lives in the event of a nuclear attack on the United States. Defense Department studies of a wide range of hypothetical attacks show that fallout shelters would save tens of millions of lives. Our primary focus in civil defense continues to be the development of a nationwide fallout shelter system through the dual-purpose use of existing structures and the management of this system and supporting emergency systems through maximum use of the existing capabilities of State and local governments.

Our civil defense budget estimate for fiscal year 1969 totals $77.3 million. Both Secretary McNamara and Secretary Resor, in their appearances before the Senate Armed Services Committee last month, stated that this amount represents the lowest possible sustaining rate for the national civil defense effort and reflects the necessity for reducing to minimum essential levels of effort those activities not related to the Vietnam conflict. The total request represents a reduction of approximately 10 percent from the appropriation of $86.1 million for fiscal year 1968, and 24 percent lower than the fiscal year 1967 appropriation.

While there will, of necessity, be deferral and rephasing of major program activities, there are no changes in the basic objectives of our programs, which are designed to carry out the orderly development of our low-cost fallout shelter civil defense system.

The level of our fiscal year 1969 request complies with the intent of the budget message of the President wherein he outlines the priorities for fiscal year 1969. As he stated, "We cannot do everything we would wish to do. And so we must choose carefully among the many competing demands on our resources." Accordingly, civil defense program activities which are delayed or deferred with the least damage to the program and can be made up at a later date are presented in the budget estimate at rates below the fiscal year 1968 level or altogether omitted from the request. Among those included at lower rates are: Matching funds for State and local civil defense supplies and equipment; surveys of new buildings and homes to identify fallout protection available in existing structures; and public civil defense education. Items which are deferred completely to later fiscal years include shelter supplies and radef instrument procurement, completion of our protected regional emergency operating centers, and modernization of emergency water supply equipment.

The establishment of an effective civil defense capability must rely on the coordinated efforts of Federal, State and local government. This is dictated, not only by statute, but by the organizational and economic realities of our governmental structure. The role of the Federal Government is to provide leadership in peacetime planning and to encourage active participation of State and local governments in building and maintaining a civil defense system. Through this Federal effort, the elements of our program are defined, and guidance and financial assistance are provided to State and local governments to aid them in developing and improving their civil defense capabilities.

The basic premises underlying our guidance and assistance are:

1. *Maximum use of dual-purpose facilities is emphasized in all of our efforts.*—Dual-purpose shelter space is that which has a peacetime day-to-day use. The National Fallout Shelter Survey identifies dual-purpose space in existing structures. In addition, architects and engineers are provided technical information and advice to assist them in designing more fallout protection into new buildings. Additional examples of the application of the dual-purpose concept are: The use of commercial broadcast capabilities in the emergency broadcast system; the use of attack warning systems for severe weather warnings; and the use of State and local emergency operating centers in their day-to-day activities, and in peacetime emergencies.

2. *Use of low-cost opportunities first is our approach to develop a practical civil defense posture.*—The low-cost approach in the shelter program makes full use of the best available shelters in existing buildings and homes. We encourage the increase of fallout shelter in new construction through low-cost designs in place of more expensive methods such as single-purpose shelter construction. For emergency communications we require the use and linking together of existing communications, in use every day, rather than establish single-purpose civil defense communications nets.

3. *Our program management is based upon maximum use of existing capability of Federal, State and local governments.*—Civil defense is not a separate organization superimposed on the existing government structure; rather, it is preparing that government structure to save lives in event of nuclear attack. To enhance the effectiveness of the existing government structure in emergency operations, we provide matching funds for planning and coordinating local and State civil defense programs. State and local employees assisted by Federal funds are subject to established merit system standards under continual review by DHEW. In addition, we are continuing our efforts to increase professionalism in the operation of our program. For example, the Army Corps of Engineers and the Naval Facilities Engineering Command administer the fallout shelter survey; the Census Bureau is our agent in the home fallout protection survey; the Army Strategic Communications Command operates Federal civil defense communications and warning systems. We rely also on our colleges and universities for the bulk of our civil defense skills training and for advisory services to architects and engineers.

The present active interest and participation of local governments in the program are indicative of the progress made since 1960. There are at present over 4,000 local political jurisdictions which develop program papers in accordance with Federal guidance describing the scope and depth of their civil defense

activities. What is most impressive is the distribution of these jurisdictions in terms of their population. As you might expect, most large cities participate; 94 percent of those with over 100,000 population submit program papers and are actively engaged in the program. Similarly, 87 percent of the cities with 50,000 to 100,000 population and 83 percent of those with 25,000 to 50,000 population participate in the program. Of equal significance is the participation in the small towns and cities spread throughout the country. Two-thirds of the 2,800 towns and cities with populations between 5,000 and 25,000 submit program papers and actively participate in the civil defense program. Approximately 800 jurisdictions with 1,000 to 5,000 population and about 300 others with less than 1,000 population submit civil defense program papers. It seems evident that there is a significant interest and concern for the importance and continued improvement of civil defense in every part of the Nation.

Based on our experience during the past year, my conclusion continues to be that there is substantial public acceptance of the civil defense program. The following facts support this view:

1. As I have already noted, there is widespread active participation by local governments in the civil defense effort. In total, local jurisdictions representing more than 83 percent of the Nation's population develop and formally submit civil defense program papers and semiannual progress reports detailing work scheduled and accomplished during the year. Such participation would not be possible without public acceptance and support at the local level.

2. Of the more than 120,000 building owners approached to date, 88 percent have signed agreements permitting the marking and stocking of their buildings and planning for their use as fallout shelters in the event of nuclear attack. Of the 12 percent who did not, most declined for administrative reasons, i.e., building ownership was in process of change, the building was to be renovated or torn down, or activity in the building was sensitive and public access could not be permitted. Less than 3 percent of the building owners approached refused because they were unsympathetic to the program.

3. In the 18 States in which the Home Fallout Protection Survey has been completed to date, questionnaires were mailed to 3.7 million home owners. Almost 80 percent of those receiving the mail questionnaires took the time to complete the form and return it. This voluntary public response amply demonstrates the positive reaction of the average citizen to civil defense, when he is asked to do something practical.

Progress has continued during this past year, and at its present stage of development the national civil defense system provides a significant capability to save lives. As of January 25, 1968, our fallout shelter survey has identified over 166 million spaces in over 182,000 large structures. More than 105,000 of these structures have been marked with the standard fallout shelter sign. Over 87,000, with capacity for 83 million people, have been stocked with austere supplies, providing a minimum supply for an average of 8 days in addition to supplies normally found in these buildings. With this shelter posture, far from complete, it is estimated that up to 15 million lives could be saved that would otherwise be lost if an attack were to occur today. If the program approved for future years is not further delayed or deferred, this lifesaving capability would be doubled by 1975.

Finally, I should like to outline the civil defense legislative request currently pending in the Armed Services Committee (H.R. 15004) which relates to the civil defense budget estimates under consideration today. This bill, recommended by the administration, would extend the authorization for current Federal assistance programs under the Federal Civil Defense Act of 1950, as amended. These are to—

(1) provide matching financial assistance to States for necessary and essential State and local civil defense personnel and administrative expenses—$19,100,000 in fiscal year 1969;

(2) procure and maintain radiological equipment and to donate the same to States by loan or grant—$3,300,000 in fiscal year 1969;

(3) match costs for travel and per diem expenses of trainees at civil defense schools—$30,000 in fiscal year 1969.

These programs were authorized for a 6-year period under the provisions of Public Law 85-606, and were extended for an additional 4 years to June 30, 1968, by Public Law 88-335. The proposed legislation would extend the authority for an additional 4 years, to provide this essential assistance to existing State and local programs.

In summary, the civil defense budget estimates before you today will continue the national civil defense effort at a minimum sustaining level. While deferring desirable projects, it will enable us to maintain the existing civil defense structure at all levels of Government. It will not be possible to continue all program activities at their present levels; however, essential elements of the civil defense program will continue. I strongly urge your approval of the total civil defense request included in the President's budget.

Thank you, Mr. Chairman. I am prepared to answer any questions about our program.

GENERAL PROGRAM SUMMARY

Mr. ROMM. Let me highlight mine, then.

You will find Mr. Resor's statement has dealt with the relationship of the Sentinel antiballistic missile system and the civil defense program. He makes the point that the Sentinel system is designed to meet the potential Chinese threat in the mid-1970's and that our studies have indicated that there is adequate civil defense in the currently approved program to meet the same objectives as the Sentinel system.

Our mission obviously is to save lives, and our studies of a wide range of hypothetical attacks, particularly the heavy attacks which the Russians are capable of delivering, show that fallout shelters would save tens of millions of lives.

Our primary focus continues to be the development of a nationwide fallout shelter system, and we emphasize the use of existing structures.

FY 1969 BUDGET REQUEST

Our civil defense budget request this year totals $77.3 million. Both Secretary McNamara and Secretary Resor, in their appearances before the Congress last month, stated that this amount is the lowest possible sustaining rate for the civil defense program and reflects the necessity of reducing to minimum essential levels of effort those activities which are not related to the Vietnam conflict.

Our request this year is 10 percent below the appropriation of last year and 24 percent below the appropriation in 1967.

It is even more severe when you measure this reduction in terms of obligations. Our fiscal year 1969 obligational program is projected to be 24 percent less than the fiscal year 1968 obligation program. However, there are no changes in the basic objectives of our program, which is to continue orderly development of our low-cost fallout shelter system.

Our budget is in line with the President's intent. As you know, he stated in his budget message that we cannot do everything that we would wish to do, so we must choose carefully among the many competing demands on our resources.

Accordingly, we have delayed and deferred those parts of the program which would do the least damage and can be made up at a later date.

Among those parts of the program that are included in the budget at lower rates are matching funds for State and local civil defense supplies and equipment, surveys of new buildings and of homes to identify fallout protection available in existing structures, and public civil defense education. Some items have been deferred completely to later fiscal years. Among these are the procurement of shelter supplies and radiological defense instruments, the completion of our

protected regional emergency operating centers and the modernization of our emergency water supply equipment.

BASIC CIVIL DEFENSE CONCEPTS

Civil defense preparations obviously are by statute and by organization a joint responsibility of Federal, State and local governments. The role of the Federal Government is to provide leadership and guidance. The basic premises underlying our guidance and assistance that we provide the States and local governments are:

First, making the maximum use of dual-purpose facilities. We emphasize this in all of our efforts. The shelter program obviously is the best example. It identifies fallout shelter available in dual-purpose space that has peacetime day-to-day use.

In addition, our architects and engineers across the country have been provided information to help advise and assist them in designing more fallout protection into new construction. Other examples are the dual use of the broadcast system capabilities, use of attack warning systems for severe weather warnings, and the use of State and local emergency operating centers in their day-to-day activities and peacetime emergencies.

Our second premise is to use low-cost opportunities first. Again, the shelter program is our prime example, but I want to emphasize that we encourage the increase of fallout shelters in new construction through low-cost designs rather than single-purpose shelter construction.

In our emergency communications programs, we require that the local governments use and link together their existing communications system rather than to establish single-purpose civil defense communications nets.

Lastly, our program management is based on the maximum use of existing capabilities of Federal, State, and local governments. Civil defense is not a separate organization. Rather, it is preparing the existing government structure to save lives in the event of nuclear attack.

We have also, through our matching funds program and through the use of existing capabilities in the Federal Government, continued to attempt, and we have succeeded, to increase the professionalism in our program. The Army Corps of Engineers and the Navy Facilities Engineering Command administer our fallout shelter survey program. The Census Bureau is our agent in conducting the home fallout protection survey. The Army Strategic Communications Command operates Federal civil defense warning and communications systems.

PARTICIPATION BY LOCAL GOVERNMENTS

There continues to be a large active interest and participation by local governments in our program. At present over 4,000 local political jurisdictions develop program papers in accordance with Federal guidance describing the scope and depth of their civil defense activities.

I am sure that you might expect that most of the large cities participate. Ninety-four percent of those with over 100,000 population submit program papers. Eighty-seven percent of the cities with 50,000 to 100,000 population submit program papers. I think what is more im-

pressive and equally significant is the number of small cities and towns that provide program papers and participate actively in our program.

Two-thirds of those 2800 towns with 5,000 to 25,000 population submit program papers. Approximately 800 towns with 1,000 to 5,000 population submit program papers and have active civil defense programs. About 300 towns with less than 1,000 population also submit program papers.

PARTICIPATION BY THE PUBLIC

Based on our experience to date and our experience during the past year, my conclusion continues to be that there is substantial public acceptance of the civil defense program. This widespread active participation by local governments covers 83 percent of the Nation's population.

I would like to show you what this looks like by State. We have a map here that provides this information. I do not believe that such participation would be possible without public acceptance at the local level.

Last year I reported that 100,000 building owners had been approached to sign agreements to have their buildings used as public shelters. As of this point in time, 120,000 building owners have been approached and the results continue to be the same. Eighty-eight percent have signed agreements to have their buildings used as public shelters. Of the 12 percent who did not, most declined for administrative reasons. Building ownership was in process of change, or the building is in the process of being renovated or torn down, or activity in the building was sensitive. Actually, less than 3 percent of the building owners who have been approached by civil defense people have refused because they were unsympathetic to the program.

As another measure of how the average citizen feels toward civil defense, let me mention the home fallout protection survey. As you know, this survey is conducted by the Bureau of the Census as our agent. Where we have good addresses, Census mails questionnaires to the homeowners to complete.

Up to now, they have mailed questionnaires to 3.7 million homeowners. Almost 80 percent of those getting the questionnaire took the time, about 20 minutes, to fill it out and return it. I think this demonstrates the positive reaction of the average citizen when he is asked to do something practical in civil defense.

Mr. TALCOTT. What do you mean by that? Is 80 percent good or bad?

Mr. ROMM. This is a questionnaire mailed to the homeowner which says in effect, if you fill this questionnaire out, you will be adding to the civil defense capability. We will also let you know what the protection factor is in the best corner of your basement.

The information is confidential. No one else gets it. Summaries are made available to the administrative planners in the local governments and at the State level.

Mr. TALCOTT. My point is that you get only an 80 percent response. I would think you would get close to 100 percent like the Census Bureau.

Mr. ROMM. Filling out this form is not a legal requirement. The census is a legal requirement. However where they have sent enumerators, they get close to 100-percent response.

With respect to the mailed questionnaires, the Census Bureau informs us that this is the best return they have gotten on mailed questionnaires which is not obligatory by law. It is a voluntary filling out of the questionnaire.

PROGRAM STATUS AND PROGRESS

We have made progress in the past and over the past year as well. Our fallout shelter survey program has identified over 166 million shelter spaces in 182,000 large structures around the country, and 105,000 of these structures have been marked with our black and yellow sign, both inside and out. Eighty-seven thousand of these buildings with a capacity to provide protection for 83 million people have been stocked with Federal civil defense supplies which provide an average of 8 days of austere living capability in addition to what is normally available in these buildings.

Studies indicate this posture, right now, could save up to 15 million lives that would otherwise be lost. If the current program, as it is approved, is continued without further deferral, this lifesaving capability would be doubled by 1975.

If I may, I would like to put additional information in the record about progress in other parts of the program.

STATISTICAL SUMMARY

I have these summaries which may be useful to the committee. (The summaries follow:)

I. FALLOUT SHELTER SURVEYS

	Structures	Spaces (thousands) [1]
National fallout shelter survey	182,694	166,554
Marked	105,204	97,220
Stocked (rated capacity)	87,006	83,352
Smaller structures survey	95,215	2,276
Home fallout protection survey [2]	212,130	801
HFPS space PF 20 to PF 40	5,716,084	19,683

[1] Except for last HFPS figure, PF 40 or better spaces.

[2] Based on complete reports from Rhode Island, Minnesota, Maine, Utah, Nebraska, Iowa, Kansas, West Virginia, Colorado, Wyoming, New Hampshire, Vermont, Idaho, Wisconsin, Washington, Montana, South Dakota, and North Dakota; and interim reports from Alaska; Nassau-Suffolk Counties, N.Y.; Michigan; and Oregon. Total spaces are the number of sheltered occupants in the homes.

II. Emergency operating centers (Dec. 31, 1967):	
Completed	2,255
In process	677
III. Broadcast station protection program: Stations in program	626
(Estimated national requirement: 658.)	
IV. Warning points	1,335
V. Radiological monitoring stations	64,642
VI. Jurisdictions filing program papers with OCD	4,188
VII. Community shelter planning projects:	
Funded projects started	184
Nonfunded projects started	435
VIII. Training:	
Adult education (Dec. 31, 1967)	2,101,136
Medical self-help	5,513,514
University extension program (Dec. 31, 1967)	209,303
Architect-engineer fallout shelter analysts	14,299
Military installation radef monitoring (Dec. 31, 1967)	17,635
Labor leaders oriented	7,584
Labor union members instructed	322,618

Shelter program

Through January 31, 1968, shelter spaces for over 166 million people had been identified in more than 182,000 buildings throughout the country. Of these, over 105,000 buildings have already been marked with a black and yellow shelter sign, indicating their availability to the public in event of emergency; 87,000 buildings, with a capacity to protect over 83 million people, had received austere Federal shelter supplies which would maintain these people for an average of 8 days, in addition to the supplies normally found in these buildings.

The Home Fallout Protection Survey, initiated 2 years ago, has now been completed in 18 States and is in process in four others. Shelter has been identified in over 5.7 million homes for almost 20 million occupants of these homes. Such shelter has a protection factor over 20, most of which can be upgraded easily to the national standard.

Community shelter planning projects have been initiated in 619 planning areas. These will provide information to the public on where to go and what to do in the event of an attack. Population of these areas amounts to 58 million people.

Emergency operations

At the end of the year, State and local governments had established 2,255 emergency operating centers. In addition, 677 emergency operating centers are in the process of being completed. These centers provide a local civil command post to coordinate and direct emergency operations in political jurisdictions containing approximately 108 million people.

The program to provide selected radio broadcast stations of the Emergency Broadcast System with fallout protection, emergency power and communication links to local government, to assure their operation in a fallout environment has been initiated in 626 stations; 507 of these have already been provided with fallout protection, and 452 stations are fully operational.

The National Warning System has been extended to over 1,300 warning points at State and local government levels, almost a thousand of which are operational 24 hours a day. The system is tested daily and is capable of providing simultaneously attack warning throughout the Nation.

Radiation monitoring capability, which includes instruments and trained radiation monitors, is now available in over 64,000 monitoring stations across the country. In addition, over 87,000 shelter facilities have been provided with radiation monitoring instruments.

Training

Public training has been provided through our adult education courses, medical self-help training programs, and the Department of Agriculture Extension Service. Well over 7 million people have taken advantage of this public training. In addition, through the auspices of the labor unions, over 330,000 labor leaders and union members have received civil defense instruction. Similarly, industrial leaders have attended orientation courses and received training in civil defense skills.

Civil defense skills training has been provided to State and local government employees, to those assigned to civil defense, and to those with emergency assignments in other departments of their Government. Skills training has been provided through the Civil Defense Staff College, the Nation's universities and colleges, adult education programs provided in Nation's high schools, and by military training teams. Such skills training includes civil defense management, emergency operations, shelter management, and radiological monitoring instructors, as well as radiological monitors and shelter managers.

To date, over 14,000 architects and engineers have been qualified in fallout shelter design and shelter analysis through graduate level training. Over a quarter of a million people have been trained in radiological monitoring and 66,000 persons have received training in shelter management.

In addition, local governments have organized and trained volunteers to augment their emergency capability. Local governments report that they have enrolled and trained over 500,000 auxiliary personnel in the public safety services alone.

LEGISLATION TO EXTEND EXPIRING AUTHORITIES

Mr. ROMM. I would like to tell you that there is a legislative request currently pending in the Armed Services Committee, H.R. 15004, that relates to three parts of the budget estimate which is before you today.

These are to extend the authorization for Federal assistance for first, to match funds for personnel and administrative expenses, of which there is $19.1 million in this budget; second, to procure and maintain radiological instruments and donate these to the States for which there is $3.3 million in this budget; and third, to match funds for travel and per diem of students going to civil defense schools.

Mr. EVINS. When does your authority expire?

Mr. ROMM. The authority expires on June 30, 1968. We are asking for extension of an additional 4 years.

PERSONNEL AND ADMINISTRATIVE EXPENSES

Mr. EVINS. You have $19.1 million in the budget for the next year and the authority expires in June of this year?

Mr. ROMM. That is right.

Mr. EVINS. If that is not passed, you do not need this amount, but if it is passed you need this and probably more?

Mr. ROMM. Yes, sir. Actually, the demands that we have in hand to date from States for fiscal year 1969 amount to $20.5 million.

RADIOLOGICAL EQUIPMENT

Mr. EVINS. The same thing applies to radiological equipment; $3.3 million is in the budget. If this is not passed, you won't need this amount?

Mr. ROMM. Yes, sir.

TRAVEL AND PER DIEM

Mr. EVINS. This also applies to the matching for travel and per diem. Are these three items in one bill?

Mr. ROMM. Yes, sir. H.R. 15004. I have no doubt it will be passed.

Mr. EVINS. It is a very popular program.

Mr. ROMM. I like to think so.

In summary, I would like to state that the budget before you today will continue our effort at what is really a minimum sustaining level. We have deferred a lot of projects but we will be able to keep the current structure in being and not lose the gains we have made in the past. I urge your approval of the total amount and I will be happy to answer any questions about the program.

Mr. EVINS. Thank you, Mr. Romm. That is a very fine statement.

SERVICES OF ACTING DIRECTOR

Mr. EVINS. Mr. Romm, how long have you served as Acting Director of Civil Defense?

Mr. ROMM. Since January 1, 1967.

Mr. EVINS. It has been over a year. When are they going to make you Director? You have been confirmed in this committee. We said this before. We think that you should have been made Director.

Mr. ROMM. Mr. Chairman, I appreciate your compliment.

Mr. EVINS. I want this to get to the authorities. You have been in this capacity for more than a year and you have had long experience. You have more knowledge of the program than some of the Governors.

I can mention several of the Governors that have been here. The Governors were fine men and administrators, but you are a career man and you are skilled and able.

As far as I am concerned, you are the best administrator they have had of this program.

Mr. ROMM. Thank you, sir.

Mr. EVINS. I want this to be known. You have been confirmed in this committee.

Mr. ROMM. I will tell my immediate boss.

PAST PROGRESS OF CIVIL DEFENSE

Mr. EVINS. Mr. Romm, we are in a Vietnam war of longstanding. It is getting more costly and there is talk about a $30 billion deficit. The Congress does not have a disposition to pass a 10-percent surtax to finance the war. I am for it and I will support it.

Civil defense was passed in 1950. That is 18 years ago.

Mr. ROMM. Yes, sir.

Mr. EVINS. We have been marking, surveying, and providing grants to the States and cities. You have made a lot of shelter surveys and we know where the shelters are in case of alarm, but in 18 years we have not used them, and I hope we never will. It is like insurance. The point is that we have been at this for 18 years and we ought to have the job done.

Mr. ROMM. Mr. Evins, I would estimate we have about half of the job done.

Mr. EVINS. It is very popular with the schools, city halls, and local people. It is close to them. They know it is a program that reaches down to the grassroots level. You just said you have about half the job done. I would hate to admit that after 18 years, with all the appropriations, that you have just got the job half done. I thought that you had accomplished more than that.

You have a lot that you can point to with pride.

Mr. ROMM. I agree we have made tremendous progress. I would like to point out that our shelter survey activity did not start until 1962.

Mr. EVINS. You had, first, a program to move the people out of the metropolitan areas and then you found that you could not do that. It was too big a job. Then you abandoned that and said, "Build your own fallout shelters." Some people did and others did not.

Now you have started on another program to determine the number of basements in the homes where it is desirable to set aside space. I think it is a very good program. Civil protection is individual protection. Self-protection is the first law of nature. They know where to go and what to do.

Mr. ROMM. We now have a program underway called community shelter planning which is designed to help the local government people tell their citizenry where to go and what to do in the event of nuclear attack. This has been moving along very successfully. There are 619 of these projects underway now covering about 58 million people.

FISCAL YEAR 1969 SURVEY AND MARKING PROGRAM

Mr. JONAS. After doing all of this, the marking of all of these basement shelters, you are now going to concentrate on dual-purpose buildings?

Mr. ROMM. No, sir. We have concentrated on dual-purpose shelters from 1962 on. There has been no construction of public fallout shelters at all. All of the shelters that we have found are dual purpose.

Mr. JONAS. Now are you going to suspend the further marking?

Mr. ROMM. No, sir.

Mr. JONAS. Isn't that what you are cutting out?

Mr. ROMM. No, sir. What we have cut down by about half is the ongoing survey program of new construction. We also have no new starts of any State in the home basement survey in fiscal year 1969.

Mr. JONAS. That is what I meant.

Mr. ROMM. These items were reduced or deferred but they can be picked up during the next fiscal year.

Mr. JONAS. We thought that was part of your program.

Mr. ROMM. Yes, sir. I certainly would like to be able to put more money into it, but within this budget level, it is about as much as we can get.

Mr. JONAS. You think other aspects of your program have a higher priority than to continue this marking program?

Mr. ROMM. The other parts of the program are designed to keep going what we have already gained in the way of civil defense capabilities so that we do not lose that. There is no purpose in just finding shelter unless local operational planning is done to assure that the local government can make the best use of what is available to them. The program represented by the fiscal year 1969 request is truly a minimum sustaining rate to keep going what we have already in being and to add a minor amount of shelter space to what is already available in the national inventory.

WARNING AND DETECTION SYSTEMS

Mr. BOLAND. How much have we spent in the warning and detection system in this program over the past 5 years?

Mr. ROMM. Warning and detection systems, including the procurement of radiological detection instruments has amounted to $50 million over the past 10 years.

Mr. BOLAND. We ought to be coming about to the end of that, should we not, except maybe maintenance and warehouses?

Mr. ROMM. That is right. We have no procurement of radiological instruments in this program for fiscal year 1969. What is in the budget is the maintenance and calibration of those instruments which have been issued.

Mr. EVINS. Do you have some funds in here for purchasing equipment in 1969?

Mr. ROMM. No, sir.

Mr. EVINS. No?

Mr. ROMM. Only spare parts for the maintenance and calibration program. You cannot maintain instruments without spare components. There is no procurement of equipment.

Mr. EVINS. In line with Mr. Boland's question, we have spent about $50 million on facilities, warning and detection equipment, and this is pretty well installed and in use?

Mr. ROMM. Yes, sir. We have actually issued 3.3 million radiological instruments, valued at $26 million. That is a little over half of the total amount spent over the past 10 years. Maintaining these instruments costs about $1 per instrument each year.

SHELTER SURVEYS

Mr. BOLAND. You indicate that one of the programs that you will not be able to continue at the present level is the one with respect to marking. What other programs?

Mr. ROMM. Survey.

Mr. BOLAND. Surveying.

What other programs will you not be able to keep at the present level because of this cut?

Mr. ROMM. Surveying of large buildings as presented here is about half of the current level. We will miss about half the new buildings coming into the national inventory in fiscal year 1969. We will have no new starts of any home basement surveys in any State after fiscal year 1968. The remaining States that we have scheduled to start prior to close of the current fiscal year are Maryland, Virginia, District of Columbia, Delaware, Connecticut, and Massachusetts. We have just $700,000 in the fiscal year 1969 budget to finish up the Connecticut and Massachusetts surveys which will start this June.

Mr. BOLAND. Is the survey on the spot? You go into the building and determine whether or not it is useful?

Mr. ROMM. It is done two ways. The home survey is accomplished by mailing the questionnaire to the homeowner by the Census Bureau which has good home addresses.

Mr. BOLAND. You are talking about the new buildings coming in?

Mr. ROMM. Larger structures coming into the national inventory are handled as an on-the-spot operation, either by the Corps of Engineers or contracted for by them. It is a process which uses engineering know-how, measurements of the space and mass construction of the building. This data is processed through a computer. Each shelter area is designated and a protection factor computed, and the information goes back to the local government.

Mr. BOLAND. Thank you.

CIVIL DEFENSE TRAINING AND EDUCATION

Mr. PRYOR. Are you maintaining basically the same educational program as you have in the past?

Mr. ROMM. The fiscal year 1969 budget reflects a substantial cutback on the public education aspects of our training and education program. There is a cutback in all three of the major public education programs. We have cut back our adult education program, where, through night school classes, family heads are taught personal and family survival.

The medical self-help training program, where on a voluntary basis medical personnel teach something like a first-aid course—a cut above

that because it deals with what to do if the doctor is not able to get there—has been cut back.

The rural civil defense program, which trains our rural people in their own self-protection and protection of livestock, has been cut back. We feel that these items are deferrable in 1969 and we can pick this up again in future fiscal years.

EMERGENCY PUBLIC INFORMATION

Mr. PRYOR. During situations like the Cuban and Berlin crisis, where you found all of a sudden Americans interested in these things, interest intensifies?

Mr. ROMM. We have available emergency information on the shelf. As you go through our emergency information budget request, you will see where we have developed a book during 1968 which replaces six other publications that are currently being issued on what to do in this type of emergency. It has already gone to the printer.

To follow up on this, we will have prepositioned films, radio scripts and newspaper articles to use in the event of emergency.

PUBLIC EDUCATION BY TELEVISION

In addition, the way we hope to get at the family and personal survival course is to have it done by TV, educational and commercial TV. This has been developed and tried on a prototype basis in Massachusetts, Texas, and Maine. It looks real good. This is how we hope to make up this cut.

Mr. BOLAND. I hope you get an audience for educational TV in this program.

Mr. ROMM. It is difficult. This is a course where they have to write in and get the materials so we will know how many are participating. We will never know how many people are watching it.

Mr. BOLAND. It is true, because they won't get prime time on the commercial network.

Mr. PRYOR. Have the networks cooperated with you on this?

Mr. ROMM. The ones where we tried it, Maine, Massachusetts, and Texas, certainly have cooperated. As Mr. Boland says, we are not getting prime time, but we are getting the time where educational courses are generally shown.

I once took an educational TV course in probability at 6 o'clock in the morning. It got to be a real chore but if you missed a couple of lectures you've had it, so you got up and did it.

SHELTER SPACES STOCKED

Mr. JONAS. You have got spaces and shelters marked and stocked for 83 million people?

Mr. ROMM. Stocked. Actually, our marking is much higher. It is almost 100 million people.

Mr. JONAS. Eighty-three million people. They are all in dual-purpose buildings?

Mr. ROMM. Yes, sir. Large buildings.

SHELTERS IN HOME BASEMENTS

Mr. JONAS. How many basement shelters do you have?

Mr. ROMM. We have found, to date, a little over 20 million fallout shelter spaces through the home basement survey in the 18 States that we have finished, and the four currently in process.

There are actually more spaces than that, but the occupants of the homes which have fallout protection total 20 million people.

Mr. JONAS. Four people per?

Mr. ROMM. 3.6 is the national average. This is based on actual count.

Mr. JONAS. You are counting shelters, basement shelters?

Mr. ROMM. No. We are counting people who have homes with basements that have shelters in them.

Mr. JONAS. Do you count four to the shelter or one?

Mr. ROMM. The questionnaire, Mr. Jonas, asks the man how many people there are in his family. It is an actual count.

Mr. JONAS. I want to get it clear. Do you have 20 million basement shelters?

Mr. ROMM. Yes, sir, in terms of people living in the homes.

Mr. JONAS. Shelters for 20 million people?

Mr. ROMM. Shelter for 20 million people in about 6 million homes.

Mr. JONAS. That would be 4, 5, or 6 million basements?

Mr. ROMM. It is about 6 million.

Mr. JONAS. You do not plan to identify any additional ones in this program?

Mr. ROMM. We plan to do six more States, starting them in fiscal year 1968.

Mr. JONAS. That is through this year, in 1969?

Mr. ROMM. We won't start any additional ones in 1969. The Census Bureau—and it has been approved by the Bureau of the Budget—has agreed to incorporate in their fiscal year 1970 census a question, "Does your home have a basement?" With this information in hand, we will be able to then go out and not only update what we have done, but pick up everybody that we have not done by mailing the questionnaire directly to them.

Mr. JONAS. You have already 2.9 million questionnaires returned. What are you doing with those?

Mr. ROMM. With that information, the homeowner is informed of what the protection factor is.

Mr. JONAS. You have written back to 2,900,000 people?

Mr. ROMM. Yes, indeed. We have written back to about 7 million people because those homes that don't have shelters get a letter, too.

Mr. JONAS. You only mailed out 3.7 million?

Mr. ROMM. There is an additional approximately 4 million homes that have been handled by census enumerators.

Mr. JONAS. What did that 3.7 cover?

Mr. ROMM. That represents homes covered by mail out of the questionnaire.

Mr. JONAS. What did the returns indicate the condition to be in the homes? How many basements are equipped?

Mr. ROMM. About 50 percent of the homes that we have surveyed have basements that have good fallout protection in them.

IMPROVING SHELTERS IN HOME BASEMENTS

Mr. JONAS. Have you given instructions to those people on how to convert a basement into a shelter?

Mr. ROMM. Yes, indeed. This is what these people get back. They get information from this booklet on what the protection factor is in the center of their basements and the best corner of their basement. If that is not up to protection factor 40, the national standard, they are told how much weight to add over the best corner to bring it up to the protection factor of 40. There are instructions in here on what materials give you what kind of weight and different schemes for either doing it on a crash basis, during a crisis period, or doing it by preplanning.

Mr. JONAS. Do you have any followup information to indicate what response you get from that, what action is taken?

Mr. ROMM. We have two kinds of information. We know that very few people send in for the actual plans to do something permanent. That is about three-quarters of 1 percent. We do know, based upon sampling, that about 80 percent of the people have retained the booklet. We ask them to pin it up in the best corner so it is there for emergency information when they need it.

Mr. JONAS. You are just grinding your gears if these people do not respond effectively and do something.

Mr. ROMM. They have responded already in terms of knowing what protection they have available to them. That is a tremendous advantage.

Mr. JONAS. That booklet hanging up in the basement is too late after fallout strikes?

Mr. ROMM. That is right. But during a crisis period it is not too late to do some of the very simple schemes in here to improve their protection. Very simple things that can be done.

Mr. JONAS. For it to be worth anything, all this has to be done in advance?

Mr. ROMM. It can be done in a crisis period.

Mr. JONAS. Fifteen minutes?

I am talking about a fallout alert.

Mr. ROMM. After the fact it gets to be a little bit too late. Some of these things could still, however, be of tremendous advantage after attack if the fallout has not arrived. Fallout won't arrive everywhere at the same time. The fallout is carried by the wind. Average upper atmosphere winds are about 20-25 miles per hour. If you are 50 miles downwind you have 2 hours.

Mr. JONAS. I just can't see how. We have not hit the right formula to bring home to the people that they ought to do this in advance.

UNIT COST OF THE SHELTER SURVEYS

Mr. EVINS. Mr. Romm, this is probably the least costly of your several programs, is it not?

Mr. ROMM. This costs one dollar a home to survey. It averages, for the people that we find have fallout protection, 44 cents a space. Our survey of large buildings costs 65 cents a space.

Mr. EVINS. You distribute this pamphlet and if they are concerned about self-protection, they can either do it permanently or do it in case of emergency?

Mr. ROMM. That is exactly the kind of instruction they receive.

Mr. JONAS. I think the Chairman and I agree. It seems a bit difficult to downgrade this activity. I would have thought it would have had a higher priority in your thinking than some of the others.

Mr. ROMM. Mr. Jonas ,we are not directly——

Mr. JONAS. What is the use having radio programs and television programs if you cannot get a response to this?

Mr. ROMM. We have gotten an excellent response from the public on this.

Mr. JONAS. If they don't react to personal letters, they are not going to do it from a television program.

Mr. ROMM. I think it depends on the imminence of the threat.

At the time of the Cuban crisis we got a tremendous reaction of people doing something about it. There was enough time during that Cuban crisis to have done any of the last-minute activities proposed in this booklet. If they keep the book and if we have the instructions available in our public information media to use during the crisis period, I think we will get the right reaction from the public at the time it is needed.

Mr. JONAS. That is all.

FY 1969 BUDGET REQUESTED

Mr. TALCOTT. What amount did your agency actually ask of the administration this year?

Mr. ROMM. My budget submission forwarded by the Secretary of the Army amounted to $159.7 million.

Mr. TALCOTT. You were actually seeking a pretty substantial increase in the program?

Mr. ROMM. That was our approved figure for requesting new appropriations. That was less than our approved program in the 5-year programing system.

Mr. TALCOTT. Then within the Defense Department you were really cut down?

Mr. ROMM. This reduction was within the Defense Department. The Secretary of the Army went back and personally requested restoration of a good portion of the cut. Up to about $122 million.

Mr. TALCOTT. That was the sum submitted to the Bureau of the Budget?

Mr. ROMM. No, sir.

Mr. TALCOTT. What happened then?

Mr. ROMM. The Secretary of the Army resubmitted it, requesting restoration by the Secretary of Defense.

Mr. TALCOTT. The Secretary of Defense did what?

Mr. ROMM. The program was limited to the $77.3 million in keeping with the criteria that Vietnam related programs would be those which would receive first priority. Anything that could be deferred without having an immediate impact on the national interest would be deferred.

Mr. TALCOTT. The Bureau of the Budget went along with your recommendation?

Mr. ROMM. The Bureau of the Budget and the Defense Department review is joint. That happens at the same time.

Mr. TALCOTT. The Defense Department appraisal, with their review and coordination with all of the other defense requirements, was that $77 million is adequate?

Mr. ROMM. That is right. We were not the only program cut in the Defense Department. Secretary McNamara provided a list to Mr. Mahon's committee, I think, that added up to $21 billion in deferred items.

REDUCTION IN FISCAL YEAR 1969 PROGRAMS

Mr. JONAS. Would you yield?

With such substantial reductions in your programs, the question naturally arises as to whether it would not be better to close it all down.

Mr. ROMM. Well, sir——

Mr. JONAS. You cannot justify protecting x million people and leaving y and z million out in left field.

Mr. ROMM. There are no means in this program to protect everybody within 1 single year. There is just not that much capability in the kind of a program we have. We use what comes into the inventory. For example, there is about $25 billion worth of new construction in this country every year that has our kind of shelter in it. Since our program doesn't provide for single purpose shelters, you just have to wait for the new construction to provide protection for everyone.

What this program in fiscal year 1969 has done is to defer what can be deferred to future years and has kept going at a minimum rate that which must be kept going.

Mr. JONAS. You can defer it all to future years if we do not have an emergency. It is like insurance, is it not?

Mr. ROMM. That is true.

Mr. JONAS. If you never have a fallout to be protected from, it is never used. It is like a fire insurance policy.

Mr. ROMM. That is very true. That is true for any kind of defense program. The more defense you have, the less likely it is you will have to use it.

Mr. JONAS. I do not believe that analogy is applicable here.

Mr. ROMM. General Wheeler has stated in the past he feels that the civil defense capability adds, along with other defense programs, to the deterrent capability.

Mr. JONAS. He does think that?

Mr. ROMM. Yes; I can provide that quote for the record, if you would like.

Mr. JONAS. Deeds don't match the words quite when he starts working on the budget.

Mr. ROMM. The Joint Chiefs of Staff have supported our program and our budget request for many years.

Mr. TALCOTT. If the Federal Government, the Defense Department, does not provide the leadership, I do not see how you can expect the local people to respond. The DOD has cut it drastically. I would expect the local people to say:

The Defense Department, of which we are an integral part, is not really interested in the program as they were before. Why should we be?

Mr. ROMM. Mr. Talcott, the fact is that the part of the program that impinges on the local people has not been cut. For example, "Personnel and Administrative Expenses," providing matching funds

in which the locals are most interested, has been increased from $18.5 million appropriated in fiscal year 1968 to $19.1 million in 1969.

Mr. Evins. "Research, Shelter Survey and Marking" is up from $20 million to $21.6 million.

Mr. Romm. Mr. Evins, that is new obligational authority. If you look at our obligational program, money actually placed in the field, you will find that the account has been cut about 24 percent. The new obligational authority requested just keeps the minimum capability.

TOTAL BUDGET FIGURES

Mr. Evins. Let us take a look at your budget figures.

"Operation and Maintenance," in 1968 you had $66,100,000 for 831 jobs.

Mr. Romm. Yes, sir.

Mr. Evins. In 1969, you are requesting $55,200,000 plus a $500,000 transfer.

Overall, that makes a decrease in operation and maintenance of $10.4 million. Is that correct?

Mr. Romm. Yes, sir.

Mr. Evins. How much carryover did you have from last year in "Operation and Maintenance"?

Mr. Romm. That is an annual appropriation, no carryover.

Mr. Evins. This $500,000 transfer, where does that come from?

Mr. Romm. That comes from a working capital fund authorized some years ago to aid in the procurement of civil defense equipment by States.

Mr. Evins. They are giving you a $500,000 transfer from the fund?

Mr. Romm. Yes, sir.

UNOBLIGATED BALANCE

Mr. Evins How much unobligated balance overall, did you have at the end of last year?

Mr. Romm. The unobligated balance available for carryover at the end of fiscal year 1967 was $22.2 million.

Mr. Evins. This amount was carried over from 1967 into 1968.

Mr. Romm. That is right.

Mr. Evins. You are using that money in 1968?

Mr. Romm. We are using $19.4 million of it in 1968 and $2.8 million will be carried over into 1969.

Mr. Evins. Your next item is "Research, Shelter, Survey, and Marking," for 1968, you had an appropriation of $20 million. Next year you are asking for $21.6 million. Does this increase include the $2.8 million unobligated balance?

Mr. Romm. No.

Mr. Evins. Plus this?

Mr. Romm. Plus this. Our total obligations program for fiscal year 1969 will be $24.4 million in that appropriation. This is a 38-percent reduction from the fiscal year 1968 obligational program of $39.4 million.

Mr. Evins. Your appropriation is $1,600,000 more than last year, plus $2,800,000 unobligated balance you are carrying over?

Mr. ROMM. Yes, sir. If you look at the money actually available to the program from carryover funds, you will find that our obligations in fiscal year 1968 are scheduled at $39.4 million and fiscal year 1969 is scheduled at $24.4 million, or a reduction of 38 percent, a substantial cut.

We entered the fiscal year 1968 with a carryover of $22.2 million. We are leaving fiscal year 1968 with a carryover of $2.8 million.

Mr. EVINS. What is the unobligated balance in this fund as of today for shelter surveys?

Mr. ROMM. Against our $39.4 million obligational program for fiscal year 1968, we had obligated $23.8 million or 60 percent as of the end of February.

Mr. EVINS. You told us how much has been obligated. How much unobligated?

Mr. ROMM. There is $15.5 million unobligated.

A little under $12 million of that is still scheduled to be obligated this year.

SUMMARY OF THE BUDGET

Mr. EVINS. The total appropriation for Civil Defense for 1968 was $86.1 million and for 1969 you are requesting $77.3 million with the $500,000 transferred, which would make $8,800,000 less than in 1968?

Mr. ROMM. Yes, sir.

Mr. EVINS. That is a summary of the budget.

Mr. ROMM. Yes, sir.

Mr. EVINS. Gentlemen, let us place in the record page 1.

(The page follows:)

OPERATION AND MAINTENANCE

For expenses, not otherwise provided for, necessary for carrying out civil defense activities, including the hire of motor vehicles; and financial contributions to the States for civil defense purposes, as authorized by law, *$55,200,000 and, in addition, $500,000, which shall be derived by transfer from Civil Defense Procurement Fund established by Third Supplemental Appropriation Act, 1951 (50 U.S.C. App. 2264): Provided, That* not to exceed *$19,100,000* shall be available for allocation under section 205 of the Federal Civil Defense Act of 1950, as amended.

RESEARCH, SHELTER SURVEY AND MARKING

For expenses, not otherwise provided for, necessary for studies and research to develop measures and plans for civil defense; and continuing shelter surveys, marking, stocking, and equipping surveyed spaces; *$21,600,000,* to remain available until expended.

GENERAL PROVISIONS—CIVIL DEFENSE

Appropriations contained in this Act for carrying out civil defense activities shall not be available in excess of the limitations on appropriations contained in section 408 of the Federal Civil Defense Act, as amended (50 U.S.C. App. 2260).

No part of any appropriation in this Act shall be available for the construction of warehouses or for the lease of warehouse space in any building which is to be constructed specifically for civil defense activities.

Mr. EVINS. Page 2 shows a summary of the budget: Operation and maintenance; warning and detection, last year, was $5,710,000. Next year your budget is $4,710,000, a million dollars less for warning and detection.

Emergency operations, $20,063,000, and next year you are asking for $12,246,000.

Financial assistance to States, $27.5 million to $26 million.

Management, this is local management and headquarters personnel, is it not?

Mr. ROMM. And our regional offices and the staff college.

Mr. EVINS. Everything but the counties and cities?

Mr. ROMM. Yes.

Mr. EVINS. One item goes to the counties and another is for management, which is your own personnel. This was $12,827,000 in 1968 as against $12,744,000 for 1969.

Mr. ROMM. I would like to state that amount includes travel and housekeeping expenses.

Mr. EVINS. Your management fund does?

Mr. ROMM. Yes.

Mr. EVINS. This is a total of $55.7 million against $66.1 million for last year.

Research, shelter survey, and marking is up. Shelters is up from $12.9 million to $15.1 million. Research and development is down from $7.1 million to $6.5 million.

We will place in the record pages 2 and 3.

(The pages follow:)

APPROPRIATION AND BUDGET PROGRAM SUMMARY

Appropriation/budget program	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Operation and maintenance:			
Warning and detection	$6,077,576	$5,710,000	$4,710,000
Emergency operations	20,635,306	20,063,000	12,246,000
Financial assistance to States	28,259,989	27,500,000	26,000,000
Management	11,465,251	12,827,000	12,744,000
Total	66,438,122	66,100,000	55,700,000
Research, shelter survey and marking:			
Shelters	25,000,000	12,900,000	15,100,000
Research and development	10,000,000	7,100,000	6,500,000
Total	35,000,000	20,000,000	21,600,000
Grand total, appropriations	101,438,122	86,100,000	77,300,000

SUMMARY OF OBLIGATIONS

Appropriation/budget program	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Operation and maintenance:			
Warning and detection	$6,077,576	$5,710,000	$4,710,000
Emergency operations	20,635,306	20,063,000	12,246,000
Financial assistance to States	28,259,989	27,500,000	26,000,000
Management	11,465,251	12,827,000	12,744,000
Total	66,438,122	66,100,000	55,700,000
Research, shelter survey and marking:			
Shelters	39,445,398	31,728,236	17,900,000
Research and development	10,636,070	7,669,941	6,500,000
Total	50,081,468	39,398,177	24,400,000
Grand total, obligations	116,519,590	105,498,177	80,100,000

Operation and Maintenance

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	Direct obligations:			
	1. Warning and detection	6,078	5,710	4,710
	2. Emergency operations	20,635	20,063	12,246
	3. Financial assistance to States	28,260	27,500	26,000
	4. Management	11,465	12,827	12,744
	Total direct obligations	66,438	66,100	55,700
	Reimbursable obligations:			
	4. Management	123	125	125
10	Total obligations	66,561	66,225	55,825
	Financing:			
11	Receipts and reimbursements from: Federal funds	−123	−125	−125
22	Unobligated balance transferred from other accounts	−1,000		−500
25	Unobligated balance lapsing	661		
	New obligational authority	66,099	66,100	55,200
	New obligational authority:			
	Current authorization:			
40	Appropriation	66,100	66,100	55,200
41	Transferred to other accounts	−1		
43	Appropriation (adjusted)	66,099	66,100	55,200
	Relation of obligations to expenditures:			
10	Total obligations	66,561	66,225	55,825
70	Receipts and other offsets (items 11-17)	−123	−125	−125
71	Obligations affecting expenditures	66,438	66,100	55,700
72	Obligated balance, start of year	54,159	50,897	55,997
74	Obligated balance, end of year	−50,897	−55,997	−54,097
77	Adjustments in expired accounts	−4,268		
90	Expenditures	65,432	61,000	57,600
	Expenditures are distributed as follows:			
01	Out of current authorizations	37,126	36,000	33,600
02	Out of prior authorizations	28,306	25,000	24,000

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Direct obligations:			
	Personnel compensation:			
11.1	Permanent positions	9,011	9,970	10,157
11.3	Positions other than permanent	86	110	64
11.5	Other personnel compensation	26	30	45
	Total personnel compensation	9,124	10,110	10,266
12.0	Personnel benefits	705	730	752
21.0	Travel and transportation of persons	560	597	572
22.0	Transportation of things	33	31	9
23.0	Rent, communications, and utilities	444	386	382
24.0	Printing and reproduction	814	1,429	734
25.1	Other services	10,543	12,382	9,690
25.2	Services of other agencies	13,617	12,370	6,458
26.0	Supplies and materials	1,939	350	676
31.0	Equipment	348	184	131
41.0	Grants, subsidies, and contributions	28,300	27,530	26,030
42.0	Insurance claims and indemnities	1		
	Total direct obligations	66,438	66,100	55,700
	Reimbursable obligations:			
11.1	Personnel compensation: Permanent positions	6		
21.0	Travel and transportation of persons		1	1
23.0	Rent, communications, and utilities	60	64	64
24.0	Printing and reproduction	9	10	10
25.1	Other services	16	17	17
25.2	Services of other agencies	21	22	22
26.0	Supplies and materials	9	9	9
31.0	Equipment	2	2	2
	Total reimbursable obligations	123	125	125
99.0	Total obligations	66,561	66,225	55,825

PERSONNEL SUMMARY

Total number of permanent positions	849	831	831
Full-time equivalent of other positions	18	25	25
Average number of all employees	734	830	831
Average GS grade	10.185	10.290	10.290
Average GS salary	$11,836	$12,405	$12,591
Average salary of ungraded positions	$5,214	$5,990	$5,990

Mr. EVINS. We will take the items on page 4. This is your appropriation summary for operation and maintenance.

We will put pages 4 and 7 through 10 in the record.

(The pages follow:)

OPERATION AND MAINTENANCE APPROPRIATION SUMMARY—DIRECT OBLIGATIONS

Budget program/project	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Warning and detection	$6,077,576	$5,710,000	$4,710,000
Warehousing and maintenance	4,577,430	4,100,000	3,600,000
Warning systems	800,457	800,000	600,000
Detection and monitoring systems	699,689	810,000	510,000
Emergency operations	20,635,306	20,063,000	12,246,000
Training and education	12,711,784	13,174,000	8,277,000
Emergency information	1,865,450	2,989,000	1,700,000
Damage assessment	1,426,258	1,635,000	1,200,000
Emergency operations systems development	1,877,077	1,000,000	750,000
Broadcast station protection program	1,156,978	806,000	180,000
Other emergency operations activities	1,597,759	459,000	139,000
Financial assistance to States	28,259,989	27,500,000	26,000,000
Personnel and administrative expenses	17,376,500	18,500,000	19,100,000
Emergency operating centers	5,970,535	4,500,000	4,500,000
Survival supplies, equipment and training	4,912,954	4,500,000	2,400,000
Management	11,465,251	12,827,000	12,744,000
Personal services and benefits	9,828,867	10,840,000	11,018,000
Travel	511,578	525,000	500,000
Administrative and housekeeping expenses	1,124,806	1,462,000	1,226,000
Total	66,438,122	66,100,000	55,700,000

WARNING AND DETECTION

PROJECT	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Warehousing and maintenance	$4,577,430	$4,100,000	$3,600,000
Warning systems	800,457	800,000	600,000
Detection and monitoring systems	699,689	810,000	510,000
Total	6,077,576	5,710,000	4,710,000

WAREHOUSING AND MAINTENANCE

Fiscal year 1967	$4,577,430
Fiscal year 1968	4,100,000
Fiscal year 1969	3,600,000

1. Warehousing and transportation ($1,085,589) ($1,000,000) ($800,000)

Government owned radiological and emergency water supply equipment and supplies are located in Government controlled warehouses throughout the country. The radiological equipment is awaiting distribution by either grant or loan to State and local governments and the emergency water supply and purification equipment is being maintained to assist State and local governments during the postattack period.

Radiological and emergency water supply items are not standard market equipment and therefore must be procured in advance of an emergency; provided secure storage; packaged into training or operational sets as required and issued to State and local governments. Each lot of radiological instruments is inspected upon receipt from the manufacturer prior to shipment to its final destination. Instruments are individually checked for operability and assembled into kits or sets.

Emergency water supply equipment is available on a loan basis to States and communities to assist them in overcoming severe water shortages during peacetime as well as postattack emergencies. The equipment consists of pipes, couplings, pumps, purifiers, chlorinators, and storage tanks. During past droughts, the equipment has been used extensively by many communities to pump water from lakes or streams to local reservoirs in areas where normal water supplies have failed. During fiscal year 1967, 77 communities in 23 States were loaned emergency water supply equipment as a result of natural disasters. Use of this equipment for critical peacetime water shortages does not degrade its value for postattack operations. Water shortages critical enough to warrant peacetime deployment would remain critical after attack.

Funds are being requested to reimburse the Defense Supply Agency for recurring services related to the warehousing, including management costs, of OCD radiological and engineering equipment. The costs include warehouse space; issue, storage, and receipt; maintenance and quality control surveillance; and second destination transportation costs to meet OCD program requirements.

Inventory value of stocks on hand as of June 30, 1966 and 1967 and estimated for fiscal years 1968 and 1969 are shown on the following page.

[In millions of dollars]

	Radiological defense equipment	Emergency water supply equipment	CW equipment	Total
In warehouse as of June 30, 1966	27.4 (1.8)	6.4	0.3	34.1
Receipts during fiscal year 1967	+2.1 (5.3)	[1] +.2	0	+2.3
Issues during fiscal year 1967	−2.2 (.4)	([2])	0	−2.2
In warehouse as of June 30, 1967	27.3 (1.7)	6.6	.3	34.2
Estimated receipts during fiscal year 1968	+1.7 (.7)	0	0	+1.7
Estimated issues during fiscal year 1968	−3.3 (.5)	([2])	0	−3.3
In warehouse as of June 30, 1968	25.7 (1.9)	6.6	.3	32.6
Estimated receipts during fiscal year 1969	+1.5 (.8)	0	0	+1.5
Estimated issues during fiscal year 1969	−3.3 (.6)	([2])	0	−3.3
In warehouse as of June 30, 1969	23.9 (2.1)	6.6	.3	30.8

[1] Emergency water supply equipment receipts during fiscal year 1967 consisted of replacement items which included 5 miles of aluminum pipe, elbow caps, butterfly valves with extensions, primer manifolds, filters, and other accessories.
[2] During fiscal year 1967, OCD equipment was received and issued for a total dollar workload of $8,000,000. It is estimated that fiscal year 1968 and fiscal year 1969 workloads will be approximately at the same level as fiscal year 1967.

Note: Figures in parentheses are repair parts included in total.

2. Maintenance and calibration of radiological instruments ($3,341,293) ($3,100,000) ($2,800,000)

Radiation detection and measuring instruments are the only known means for determining the exact hazard to people and animals from radioactive fallout. They are required to measure exposure rates and doses in shelters and also for warning people of overexposure when performing emergency services outside of shelters for limited periods of time during a fallout environment. To provide a reliable operational capability, experience dictates that these sensitive instruments must be periodically inspected, calibrated, and repaired.

During fiscal year 1967, the federally funded radiological instrument inspection, maintenance and calibration program was expanded to include all 50 States, the District of Columbia and Puerto Rico. Through the inspection aspect of these contracts, the RADEF capability at local level is promoted and the monitoring capability increased. Where full time inspectors are used, they assist in the establishment of monitoring stations in areas where there is a considerable requirement for stations. Each State contract is thoroughly reviewed and evaluated in relation to its effectiveness versus cost prior to extension or continuation. The

experience developed in the maintenance and calibration contracts is evaluated and the results disseminated to the other States so that they may utilize the information.

Funds in the amount of $2.8 million are being requested for fiscal year 1969 to:

(*a*) Continue the federally funded radiological instrument inspection, maintenance and calibration program with all 50 States, the District of Columbia and Puerto Rico. Funds requested will permit continuation of contracts through 1969, $2,250,000.

(*b*) Procure batteries, supplies and replenishment items to provide continuing support to this program, $100,000.

(*c*) Procure repair parts to support the State maintenance shops requirements and to upgrade, to present day standards, selected early model instruments. The majority of the repair parts needed are of special design for use in radiological instruments. Bulk procurement by OCD using improved specifications is more economical than to have each State maintenance facility purchase for its own need, except for a few very common items that can normally be purchased locally. Distribution of these items will be from the Federal depot to the State's shop. To increase the capacity of the State shops, special test equipment designed for use with OCD instruments will be procured. Time will be saved in isolating defective components and restoring the operability of the instrument, $450,000.

3. Emergency water supply equipment program ($150,548) ($0) ($0)

During fiscal year 1967, funds were utilized for the procurement of 5 miles of aluminum pipe, elbow caps, butterfly valves with extensions, primer manifolds, filters and other accessories to replace selected obsolete emergency water supply equipment.

WAREHOUSING

Mr. EVINS. There is no construction money for new warehouses or for leasing.

Mr. ROMM. Our warehousing is done through GSA and through the Defense Supply Agency. This covers the warehousing of our radiological defense equipment inventory which is now in five depots and it will do down to three depots by fiscal year 1969.

Mr. EVINS. You say the radiological equipment is awaiting distribution by either grant or loan to State and local governments?

Mr. ROMM. Yes, sir, part of it.

Mr. EVINS. You have not distributed this?

Mr. ROMM. We have distributed 3.3 million instruments and there is available——

Mr. EVINS. This is not really all for payment for warehouse rent and personnel?

Mr. ROMM. This is the warehousing of those instruments, transportation when issued, and their maintenance and calibration, which starts on page 9.

USE OF EMERGENCY WATER SUPPLY EQUIPMENT

Mr. EVINS. Radiological and emergency water supply items are not standard market equipment, and therefore must be procured in advance of an emergency; provided secure storage; packaged into training or operational sets as required and issued to State and local governments. Each lot of the instruments is inspected upon receipt.

Emergency water supply equipment is available on a loan basis to States and communities, and you say the equipment consists of pipes, couplings, pumps, purifiers, chlorinators, and storage tanks. I thought you supplied this already.

Mr. ROMM. This is kept in central storage for use in time of emergency. We actually have used it to assist in peacetime disasters.

Mr. EVINS. You say during fiscal year 1967, 77 communities in 23 States were loaned emergency water supply equipment as a result of natural disasters. Did they pay you back?

Mr. ROMM. They are supposed to maintain the equipment until they no longer need the emergency water supply.

LOCATION OF EMERGENCY SUPPLIES AND EQUIPMENT

Mr. EVINS. Where are the emergency radiological supplies located?

Mr. ROMM. Bastrop, Tex.; Mechanicsburg, Pa.; Stockton, Calif.; Anniston, Ala.; and Kansas City, Mo.

Mr. EVINS. How many are there?

Mr. ROMM. Five.

Mr. EVINS. Are your water supplies in the same warehouses?

Mr. ROMM. In those warehouses and 11 others. They are distributed more widely.

RECEIPT AND ISSUE OF RADIOLOGICAL EQUIPMENT

Mr. EVINS. On page 9 you show some breakdown figures. Receipts during 1967, plus 2.1. Issues during 1967, minus 2.2. In warehouses as of June 30, 1967, 2.3.

Explain these items.

Mr. ROMM. That is the value of radiological defense instruments in the warehouse at the beginning of the year, and those that have come in from new procurement during the year. Procurement was started some years ago and delivery is still coming in. It also shows those issued to States on loan or grant. For each year we have shown the amount of warehousing activity that is going on.

Mr. EVINS. Is this in dollars?

Mr. ROMM. Yes, sir; in millions of dollars.

Mr. EVINS. At the end of 1969 you have $23.9 million in the radiological equipment in the warehouse.

Mr. ROMM. Yes, sir.

MAINTENANCE AND CALIBRATION OF EQUIPMENT ISSUED TO STATES

Mr. EVINS. Maintenance and calibration of instruments, $2.8 million.

Mr. ROMM. That is for the instruments already issued to the States. We perform a warehousing function for those in our Federal warehouses in addition to the maintenance and calibration of those instruments that have been issued. We are requesting $2.8 million next year to keep them maintained and calibrated.

Mr. EVINS. You will have $23.9 million in the warehouse at the end of 1969.

Mr. ROMM. Yes, sir, and we have issued $26.6 million worth already.

Mr. EVINS. After it is issued, you have to maintain the instruments for the States?

Mr. ROMM. We have to maintain the instruments that are issued. That is where the maintenance and calibration comes in. These instruments are checked out in the warehouses before they are issued and

after that they are maintained at the State level by contract with each State.

Mr. EVINS. This is another service to the State?

Mr. ROMM. Yes, sir.

Mr. EVINS. You are requesting $2,250,000 to continue the federally funded radiological instrument inspection, maintenance and calibration program with all the States. You inspect them when you buy them, you inspect them when you put them in the warehouse, you inspect them when you distribute them, and you need $2,250,000 to inspect them after they have been distributed?

Mr. ROMM. While they are out in the field.

Mr. EVINS. Do they not do anything for you after you give them all of this fine equipment?

Mr. ROMM. We have for many years been trying to figure out the best way to do this. All of the States have these contracts, and this, we know, gets the job done.

Mr. EVINS. How is this accomplished?

Mr. ROMM. This is all done by State employees, either by the State police or by the National Guard capability within the State. What we are paying for is personal services.

Mr. EVINS. You are paying for the National Guard and the State police during the time they make inspections?

Mr. ROMM. Yes, sir.

Mr. EVINS. Funds to procure batteries, that is another $100,000.

Then for procuring repair parts you have $450,000. You do everything for them, Mr. Romm. We want them to be self-reliant and independent.

Mr. ROMM. I think you will find a great savings to everyone when we centrally procure the standard components and spare parts, rather than having them procured in 50 different places.

EQUIPMENT IN WAREHOUSES

Mr. JONAS. All of this is equipment in warehouses?

Mr. ROMM. No, sir, only those instruments that have not yet been issued or granted to the States are in our Federal warehouses. For that we have a warehousing requirement. There are an additional 3.3 million instruments that have been issued to the states and local governments. They are responsible for those instruments, we pay to maintain and calibrate them so that they will be ready for emergency use.

Mr. JONAS. Are they in some central storage place?

Mr. ROMM. No, sir; in 64,000 radiation monitoring stations around the country and 87,000 buildings that have shelters in them.

Mr. JONAS. What kind of equipment do you have in the Federal warehouse?

Mr. ROMM. The same kind of equipment that has been issued.

Mr. EVINS. It is surplus equipment that they have not used.

Mr. JONAS. It is not going to do anybody any good in the warehouse.

Mr. ROMM. It is a requisitioning process. The shelter is marked and then gets stocked. The stocking requisitions includes these instruments.

In addition, when a radiation monitoring station is established, these instruments are required plus two to four trained personnel to know

how to use them. When that happens they request the instruments to be issued to them. That is how the issue process occurs. The instruments we have in the warehouse are available to them when the requisitions come in.

Mr. EVINS You have a large amount distributed throughout the country which the Government maintains, and you have another large amount in the Federal warehouses which they can call upon?

Mr. ROMM. That is right.

Mr. EVINS. I can understand why you would maintain them in the warehouse. You inspect them when you purchase them, inspect them in the warehouse, and pay for the local police or local guard for the time they have spent on inspecting the instrumentation after you have furnished it to the States and the local communities.

Mr. ROMM. And this is part of the authorization in the act which permits us to grant and maintain radiological instruments. You must remember these instruments are unique to civil defense. They have no other function or purpose.

WARNING SYSTEMS

Mr. EVINS. Besides the instrumentation, you have the emergency water equipment and you supply that.

Let's look at your warning systems on page 11. You asked for $800,000 last year and you are asking for $600,000 next year. You state:

> The most promising configuration of radio systems which meets existing operational requirements is a system of low frequency radio stations.

Is this the system that has been accepted?

Mr. ROMM. Yes, sir; it is the program which is funded by the U.S. Army Strategic Communications Command and it has not yet been deployed.

Mr. EVINS. Is the decision information distribution system deployed?

Mr. ROMM. That is the one not yet deployed.

Mr. EVINS. Then you have the Federal Communications Commission, industry, the Military Establishment, and the NAWAS warning points.

Mr. ROMM. That is right, and the national warning system is the one that is deployed. If you would like, we can provide a map showing how widespread that is. It is a real good system.

Mr. EVINS. These are funds available for 1968 for these purposes: Low frequency alert receivers, $150,000; warning receivers, $60,000; component development, $75,000; LF receiver performance tests, $190,000; engineering services, $325,000.

After buying all of this equipment, it is not sufficient and you want to purchase more in 1969.

Mr. ROMM. The funds for 1968 and 1969 are all development funds to provide a better warning capability than exists today. Our studies have indicated that speedier warning and speedier response to warning could save up to 8.5 million additional people in event of a large-scale attack. This is a critical piece of our development program, and the material proposed here would give us a much better capability for warning over and above what we have now.

Mr. EVINS. My observation is that you bought this equipment last year and you still want to buy more when you have three or four different systems.

Mr. ROMM. We have not purchased this equipment. This is really developmental, this is not deployed equipment. All we ask for in fiscal years 1968 and 1969——

Mr. EVINS. You mean you are telling the committee that after 18 years you have not developed a safe warning system yet?

Mr. ROMM. We have a fine warning system, but it could use improvement.

DETECTION AND MONITORING SYSTEMS

Mr. EVINS. It is operating and is a fine system.

You are asking for $600,000 for your warning system for next year.

On page 15, "Detection and Monitoring Systems," last year was $810,000, and you are asking for $510,000 next year. We will place 15 through 18 in the record.

(The pages follow:)

DETECTION AND MONITORING SYSTEMS

Fiscal year 1967	$699,689
Fiscal year 1968	810,000
Fiscal year 1969	510,000

1. Radiological engineering service ($692,825) ($800,000) ($500,000)

This program continuously reevaluates the applicability of past and present radiological instrumentation and systems for use in community shelters and national monitoring programs. This equipment is updated or otherwise modified as needed to meet the requirements for cost, performance, and reliability in providing the radiological data important in making decisions concerning human safety in a nuclear disaster. This is accomplished through a comprehensive engineering program which examines present instrumentation in relation to present and future needs.

This engineering program is designed to evolve the optimum radiological instrumentation and systems for use in organized civil defense programs at all levels of government.

Simpler, less costly and more reliable methods of obtaining the required radiological data are continuously being sought.

(*a*) *Production engineering, $55,000.*—Production engineering bridges the gap between research and mass production. New or improved instruments and components thereof are converted into devices capable of being produced at minimum cost. Production engineering projects produce detailed preliminary specifications suitable for limited pilot production procurement. This project category applies to improvements to component parts and detectors of instruments in the inventory as well as new instruments.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Instrument calibration improvements	$44,311	$10,000	
Survey meters using solid-state circuit elements		25,000	
Improved Geiger-Mueller detectors	33,007		
Improved power sources			$25,000
Improved components for radiological instruments	75,000	80,000	
Improved test equipment for Federal depots and State shops	25,250	20,000	
Radiological instruments for use by the citizen		30,000	30,000
Total	177,568	165,000	55,000

(b) *Pilot production, $20,000.*—Small quantities of instruments or components which have been production engineered are manufactured in accordance with preliminary specifications. These projects are closely monitored so that final production or retrofit specifications may be prepared. Equipment produced under these contracts are given extensive field trials.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Mark IV instrument calibrators	$114,725	$30,000	
Detectors for automatic remote radiological monitoring systems		40,000	$20,000
Total	114,725	70,000	20,000

(c) *Pilot installations, $70,000.*—The feasibility and utility of new radiological monitoring systems concepts are determined by the installation of prototype systems which are evaluated by detailed examination, test and exercise.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Trial installation in Montgomery County, Md	$19,765		
Automatic remote radiological monitoring and reporting systems		$80,000	$70,000
Total	19,765	80,000	70,000

(d) *Field trials, $70,000.*—Production instruments, research prototypes, and instruments developed for other services as well as those produced in pilot quantities for OCD are tested in the field environment. These field trial projects serve to produce refined and highly dependable final operating procedures and reveal any deficiencies in instrument reliability so that early remedial actions may be taken.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Field trial in Montgomery County, Md		$20,000	$20,000
Field trials of radiological instruments by States	$35,047	50,000	50,000
Field trials of remote sensor radiation meters by Corps of Enginners	10,000		
Field testing of aerial survey meters at Fort McClellan		10,000	
Total	45,047	80,000	70,000

(e) *Special projects, $115,000.*—This category provides for comprehensive maintenance manuals, reliability and effectiveness studies, design and standardization projects, value engineering, and the study of special logistics problems relating to radiological instruments. Selected instruments are retrofitted as necessary to improve reliability, performance, and logistics.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Preparation and improvement of technical and maintenance manuals	$23,380	$20,000	$20,000
Engineering for retrofitting of radiological instrument inventory	74,678	30,000	
Consolidation and standardization of repair parts for radiological instruments	38,700	35,000	
Specification improvement	26,233	30,000	25,000
Operational readiness evaluation of radiological instruments		30,000	
Instrumentation circuit design		40,00	40,000
Computerized circuit design analysis		20,000	30,000
Power requirements analysis and evaluation		20,000	
Total	162,991	225,000	115,000

(*f*) *Surveillance, $170,000.*—It is necessary to provide day-by-day engineering monitoring of items in mass production. Closely supervised tests are necessary in order to assure that equipment conforms with specifications and meets all performance requirements. Similar surveillance is maintained for depot stocks to insure that previous procurements continue to perform in accordance with the applicable specifications.

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Testing by the National Bureau of Standards	$61,390	$60,000	$50,000
Radiological instrument test facility (operated by Stratcom on a reimbursable basis)	51,339	60,000	60,000
Analytical and design services (principally by AEC)	60,000	60,000	60,000
Total	172,729	180,000	170,000

2. Weather reporting ($6,864) ($10,000) ($10,000)

Federal, State, and local civil defense organizations need the capability to provide a fairly valid indication of the direction and average speed of fallout from surface burst nuclear weapons. The forecasts, provided by contract with the U.S. Weather Bureau, are to be used primarily to alert areas of the likelihood of fallout and its anticipated time of arrival, for use in such last minute actions as directing final phases of movement to shelter and the orderly shutdown of industries.

Mr. ROMM. This is really a quality control effort over our existing monitoring equipment and for the development of prototypes. It has paid off in many ways. The new calibrater does calibration in a lot faster time, and we have cut the number of components, which simplifies our maintenance problem, down from 750 to 300.

RADIOLOGICAL ENGINEERING SPECIAL PROJECTS

Mr. EVINS. What are your special projects, Mr. Director?

Mr. ROMM. What we have here is, first, the development of improved technical and maintenance manuals for the people who are maintaining equipment in the field. We want to improve our specifications in the event of future procurement and improve our design circuits in existing instruments. We have found in the V–715 survey meters we doubled the battery life by changing the circuits. So this pays off many times over.

Mr. EVINS. Special projects provide for comprehensive maintenance manuals——

Mr. ROMM. And for better specifications and circuitry.

WEATHER REPORTING

Mr. EVINS. Weather reporting goes up to $10,000 from $6,000 in 1967. I thought the Weather Bureau did that for you.

Mr. ROMM. This is forecast of upper atmosphere winds, which is used in fallout forecasting. What this pays for is information to be provided to State and local governments so if there were an attack they would be able to forecast the arrival of fallout.

Mr. EVINS. Can't you get that from the Air Force? They have a large budget. They know about the weather.

Mr. ROMM. That is not the same.

WARNING SYSTEMS

Mr. MARSH. Will the DIDS system you describe here replace the Emergency Broadcasting System?

Mr. ROMM. No, sir.

Mr. MARSH. How will it fit into the overall warning plan?

Mr. ROMM. The decision information distribution system is a low-frequency system which is designed to provide both hard copy and voice information on warnings. It is very flexible in terms of how it would operate.

For example, we can disseminate information to about 1,000 different addressees on the NAWAS system right now. It is a nationwide partyline system. However, in time of crisis you could not use it if you wanted to restrict the kind of information you gave to whom.

In addition, once you get the DIDS transmitters up, you can add any number of local governments to the system by just providing them with a receiver. It is a very expandable system. In other words, right now we get to about 1,300 warning points with 960 of them active 24 hours a day. To get at 6,000 local governments is a costly process. If you had the low frequency radio system and you could get it to them with a one-time investment in the receivers.

Mr. MARSH. Thank you.

EMERGENCY OPERATIONS

Mr. EVINS. "Emergency operations." We will place in the record pages 19 through 30.

(The pages follow:)

PROGRAM—EMERGENCY OPERATIONS

Project	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Training and education	$12,711,784	$13,174,000	$8,277,000
Emergency information	1,865,450	2,989,000	1,700,000
Damage assessment	1,426,258	1,635,000	1,200,000
Emergency operations systems development	1,877,077	1,000,000	750,000
Broadcast station protection program	1,156,978	806,000	180,000
Other emergency operations activities	1,597,759	459,000	139,000
Total	20,635,306	20,063,000	12,246,000

Training and Education

Fiscal year 1967	$12,711,784
Fiscal year 1968	13,174,000
Fiscal year 1969	8,277,000

DISTRIBUTION BY ITEM

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
1. Operation by staff college	$342,245	$484,000	$400,000
2. University extension program	3,988,428	4,100,000	3,400,000
3. Adult education program	4,009,000	3,900,000	2,000,000
4. Armed Forces program	14,440	16,000	16,000
5. Rural civil defense program	1,400,000	1,200,000	300,000
6. Medical self-help program	1,045,700	1,200,000	500,000
7. Architect and engineer development program	1,342,387	1,322,000	977,000
8. Training materials	271,228	576,000	484,000
9. Training evaluation and improvement	199,786	50,000	150,000
10. Community shelter planning training program	98,570	326,000	50,000
Total	12,711,784	13,174,000	8,277,000

1. *Operation of staff college: fiscal year 1967, $342,245; fiscal year 1968, $484,000; fiscal year 1969, $400,000*

The Office of Civil Defense concentrated its advanced staff training at the Staff College in Battle Creek, Mich. In addition to this training function, the school develops instructional doctrine on shelter and emergency operations and develops training materials in support of selected national civil defense programs. This school is considered as the prime source within the Office of Civil Defense for instructional and training doctrine. The transfer of basic training of State and local personnel to the university extension program and to State civil defense training centers permits a larger measure of the resources of the Office of Civil Defense school to be applied to advanced work and the development of professional development courses to meet the needs of the civil defense program.

In addition to the resident instruction offered by the school, nonresident instruction in the form of seminars and traveling teams is provided for the selected training of Federal, State, local, and industrial officials.

During fiscal year 1969, the Staff College will present a schedule of 80 resident courses and will graduate approximately 2,500 students. In addition to the resident course schedule, the Staff College will continue to conduct nonresident courses such as emergency operation simulation sessions, special training in support of community shelter planning, and special and advanced work for the professional development of civil defense officials.

(*a*) *Recurring operation expenses, including renovations and modifications: fiscal year 1967, $202,745; fiscal year 1968, $374,000; fiscal year 1969, $320,000*

Recurring operating expenses of the Staff College provide for normal administrative and housekeeping activities, audiovisual aids, specialized training supplies and equipment, and renovations and modifications necessary to provide special facilities required for specialized course instruction.

(*b*) *Professional support and consultant services: fiscal year 1967, $99,272; fiscal year 1968, $80,000 fiscal year 1969, $50,000*

To continually upgrade the professional level of school curriculum and methodology, professional support and consultant services are required to provide for the development, conduct, and evaluation of training in support of the Staff College. This includes consultative and other services such as: (1) guest lectures; (2) seminars; (3) preparation of training materials; and (4) course and materials evaluation.

(*c*) *Student expense program: fiscal year 1967, $40,228; fiscal year 1968, $30,000; fiscal year 1969, $30,000*

The student expense program was developed to encourage States and local subdivisions to increase their civil defense readiness by facilitating the training of civil defense leaders and instructors. Under the provisions of the Federal Civil Defense Act of 1950 (Public Law 920), as amended, eligible students are authorized partial reimbursement for expenses incurred in attendance at resident courses at the Staff College.

2. *University extension program: fiscal year 1967, $3,988,428; fiscal year 1968, $4,100,000; fiscal year 1969, $3,400,000*

The extension divisions of land-grant colleges and universities have unique capability in civil defense education and training through their faculties and their experience in local communities.

The civil defense university extension program, which began in fiscal year 1963, is based upon two major premises:

(*a*) That civil defense education and training must be effectively carried on at the local level to achieve operational readiness.

(*b*) That civil defense education and training must make maximum use of existing instructional resources, thus avoiding the development of special facilities used only for civil defense.

Under contracts with OCD, the extension divisions of the colleges and universities use their extensive resources to conduct conferences for government officials and community leaders and give training courses to improve defense operational readiness in local communities. Success in meeting training goals in fiscal year 1968 and earlier years will result in reduced training needs under the university extension program for shelter managers and radiological monitors for fiscal

year 1969. Additional training requirements for these two areas will be fulfilled through use of the adult education program. (See paragraph 3.)

Contracts with State land-grant colleges and universities in 50 States, the District of Columbia, and Puerto Rico to be executed during fiscal year 1968 and fiscal year 1969 will provide for:

	Fiscal year 1968	Fiscal year 1969
(a) Conferences for public officials and key community leaders	450	200
(b) Conferences for business and industry	100	52
(c) Radiological defense officer courses	200	200
(d) Civil defense management courses	200	200
(e) Emergency operation simulations	200	300
(f) Courses in planning and operations	250	250
(g) Shelter manager instructor courses	100	100
(h) Radiological monitor instructor courses	100	100
(i) Radiological monitor courses	250	0
(j) Shelter managers	100	0

WORKLOAD

	Actual, fiscal year 1967		Estimate, fiscal year 1968	
	Conducted	Number certified	To be conducted	Number to be certified
COURSES				
Shelter management (instructor)	145	2,736	134	2,400
Radiological monitoring for instructors	211	2,892	166	2,000
Radiological monitoring for instructors (refresher)	11	103	29	450
Shelter managers	478	9,018	442	8,800
Civil defense management	175	2,453	178	2,700
Radiological monitors	265	3,759	280	4,500
Radiological defense officers	137	1,256	139	1,400
Emergency operations simulations	79	3,183	172	7,000
Planning and operations			123	2,500
Total	1,501	25,400	1,663	31,750
CONFERENCES AND SEMINARS				
Conducted	624	----------	602	----------
Number participating	29,651	----------	30,100	----------

3. *Adult education program; fiscal year 1967, $4,009,000; fiscal year 1968, $3,900,000; fiscal year 1969, $2,000,000.*

It is the responsibility of government to inform citizens of protective measures that will enhance their chance of survival in the event of a disaster. The civil defense adult education (CDAE) program is a means by which the Federal Government participates with State and local governments to meet this responsibility by providing adults with a basic understanding of civil defense and instruction on individual, family and community protection against the effects of nuclear weapons.

Through local, State and Federal educational leadership and cooperation, personal and family survival courses are made available to out-of-school adults in communities throughout the country.

The resources of the adult education system also are used to train selected adults to serve as radiological monitors and shelter managers in support of civil defense emergency operations.

The Federal Government finances the CDAE program and is responsible for its overall planning and direction. The program is conducted mainly under the direction of chief State school officers through contract with the Office of Education. In most cases the chief State school officer delegates the responsibility to a State civil defense adult education coordinator. The civil defense adult education coordinator also works with local school officials in recruiting and training teachers for these courses. Instructional materials are supplied by the Federal Government. State civil defense adult education staffs and local civil defense adult education teachers are paid with Federal funds.

Since its inception on a trial basis in four States in fiscal year 1960, as of fiscal year 1967 the civil defense adult educational program has expanded to include 49 States, the District of Columbia and Puerto Rico. During this time, approximate-

ly 1.9 million adults and teachers have completed the personal and family survival course, and 66,800 radiological monitors have been trained utilizing formal classroom sessions.

The scope of the program was further increased during fiscal year 1968 to include training of shelter managers in direct support of the community shelter planning program. A decrease in funds is reflected for fiscal year 1969 since a program change is planned for fiscal year 1969 that will place increased emphasis on using television for teaching the PFS course. Field tests of television use are being conducted in selected States (Maine, Massachusetts and Texas) during the latter part of fiscal year 1968. Training in the radiological monitoring and shelter management skills will still utilize formal classroom sessions due to the instructional procedures involved.

Training effort has resulted in the following accomplishments:

	Actual, fiscal years 1960–67	Estimate, fiscal year 1968
Personal and family survival:		
Teachers trained	60,410	6,500
Adults completing course	1,896,759	380,000
Radiological monitors trained	[1] 66,785	33,000
Shelter managers trained	0	6,000

[1] Initiated in fiscal year 1966.

4. *Armed Forces program: fiscal year 1967, $14,400; fiscal year 1968, $16,000; fiscal year 1969, $16,000*

During each of fiscal years 1968 and 1969 it is estimated that the Continental Army Command (CONARC) will train approximately 2,500 radiological defense monitors in response to specific requests for this training assistance from local governments. This training activity has been operating to supplement monitor training resources of local governments. CONARC uses its existing capability in the radiological defense field in conducting this training with the Office of Civil Defense providing training materials and instruments. CONARC is reimbursed for travel and per diem of instructors, vehicular operation necessary for transportation of instructors to off-post training locations, shipment of instructional instruments to maintenance warehouses for repair, per diem of instructors to conduct Saturday training classes at off-post locations, and travel and per diem of CONARC headquarters personnel to monitor and evaluate instruction.

5. *Rural civil defense program: fiscal year 1967, $1,400,000; fiscal year 1968, $1,200,000; fiscal year 1969, $300,000*

The basic objective of the rural civil defense program is to inform farm and rural people of measures that they need to take to prepare themselves for an attack, in order to be able to protect themselves and their livestock from the hazard of radioactive fallout.

The rural civil defense program is an excellent example of the use of existing Government resources. The Department of Agriculture deals with rural America in many ways. Its county agents are intimately connected with the activities of rural people. The rural civil defense program has become an integral part of USDA Extension Service which reaches every rural county in the United States.

Funds are provided to the U.S. Department of Agriculture to prepare materials and to provide for a hard-core staff which is solely engaged in this activity. The Extension Service is responsible for disseminating civil defense information to rural people through education. The educational know-how of the Extension staff was employed to discharge this responsibility, and accepted methods of education were used to build a logical, practical, and continuing program at the current level of understanding.

Effective with fiscal year 1969 the Department of Agriculture organization for emergency preparedness functions will incorporate the rural civil defense program into the various phases of the regular ongoing activities of the cooperative extension service. This includes providing for civil defense training to local leaders, helping to organize local action groups, and acquainting rural residents with the assistance available to them through local civil defense agencies. They work through normal channels of home demonstration activities, 4–H clubs

and youth development, community development, safety programs, and agricultural meetings. These activities have promotional support through the use of press, radio, television, direct mail, and other mass communications media.

Funds in the amount of $140,000 are being requested to provide for salaries and travel of a small USDA headquarters staff of eight persons in the Federal Extension Service which gives leadership to the program and some specialist assistance and four regional representatives each monitoring liaison with two OCD regional offices and with the State extension services of the States included in their regions. In addition, $160,000 is being requested for educational materials consisting of pamphlets, brochures, television, radio and film scripts, and other training materials.

6. *Medical self-help program: fiscal year 1967, $1,045,700; fiscal year 1968, $1,200,000; fiscal year 1969, $500,000*

The medical self-help training program pertains directly to the humanitarian needs envisioned in shelter utilization as well as to the increase of community readiness for whatever disaster may occur. People trained under this program are ready to assist others in matters of health and medical care in community shelters, which is especially important when medical professionals are not present. As the number of shelter facilities of all types multiply, the ratio of medical professionals to serve the shelter occupants declines.

The program is managed by the Department of Health, Education, and Welfare (U.S. Public Health Service) through funds made available by the Office of Civil Defense. The administration of the medical self-help program below the Federal level is the responsibility of the State. At the State level, the State health department or the State civil defense office is the administrative agency responsible for program control and for distribution of all training kits to communities and support groups. At the community level the health department or civil defense office implements and administers the program. However, in order to effectively secure the necessary support needed, all industrial, church, civic, welfare, Red Cross, school, and farm organizations are asked to play a supporting role and actively participate in the organization of classes. Instructors serve on a voluntary basis.

The medical self-help training course was field tested by the Office of Civil Defense in fiscal year 1962 and implemented nationally in fiscal year 1963. Through fiscal year 1967, approximately 5.9 million people have been trained by formal classroom instruction. In addition, some educational TV stations and closed circuit arrangements are being utilized to aid in the presentation of courses. Training films and materials may be used if the classes are closely controlled, requiring students to assemble for registration, participate in practice sessions and discussion and take the examination. Locations where this has been carried out successfully include Tine County, Denver metropolitan area; Minnesota; North Dakota; Texarkana-Shreveport; South Carolina; Kansas City, Missouri School District; Chelmsford and Boston, Mass.; East Tennessee; Illinois; Arizona; Florida; Georgia; Texas; Utah; West Virginia; Colorado; Puerto Rico; and California.

During fiscal year 1965, Public Health Service became acutely aware of the need to provide additional program management to medical self-help training at the State level. As a result, Public Health Service field tested and proved the effectiveness of providing a full-time individual at State level. It is anticipated that these individuals will have succeeded in developing an in-state capability of maintaining the program by the end of fiscal year 1968. Therefore, funds for the continued assistance to States are not being requested for fiscal year 1969.

Number of people completing course

Fiscal year 1962	11,503
Fiscal year 1963	634,282
Fiscal year 1964	504,200
Fiscal year 1965	832,410
Fiscal year 1966	1,740,293
Fiscal year 1967	2,367,728

REQUIREMENTS

Item	Fiscal year 1968	Fiscal year 1969
Assistance to States	$537,000	0
Regular kits	225,000	$113,000
Printing (student supplies, lesson sets, examination booklets, supplement of family guide, instructor reports, State monthly activity reports, master control cards, etc.)	260,700	267,500
Assembling, boxing, distributing, and warehousing printed material	40,000	35,700
Sets of training films	75,000	50,000
Sets of filmstrips, including production, distribution, and warehousing	3,800	3,800
Promotional materials	15,000	15,000
Review of technical content by National Research Council	25,000	0
Miscellaneous (supplies, equipment, transportation of things, EAM processing, postage)	18,500	15,000
Total	1,200,000	500,000

7. *Architect and engineer development program: fiscal year 1967, $1,342,387; fiscal year 1968, $1,322,000; fiscal year 1969, $977,000*

Building committees, property owners, and others initiating construction projects rely heavily on the Nation's architects and engineers for design. It is of prime importance, therefore, to create sound professional competence within these professions to plan for and design effective shelters at little or no additional construction cost. The architect and engineer development program provides the practicing architects and engineers with appropriate technical training so that effective, low-cost shelters are incorporated into on-going design projects.

The ultimate goal is to have one or more architects or engineers qualified in fallout shelter analysis in each design firm and government agency which employs such professionals. In addition, it is planned to have one or more professors qualified to teach appropriate courses in shielding analysis and/or other phases of protective construction as a part of the curriculum in architectural or engineering departments of colleges and universities.

With the cooperation of architectural and engineering education institutions and their faculties, a unique professional development program for practicing architects and engineers and faculty was initiated in 1961. Over 156 institutions have cooperated in having selected architectural and engineering faculty attend special OCD-sponsored programs to become highly qualified in nuclear defense design technology. As of January 1968 there were 627 qualified instructors available to OCD for conduct of professional development courses. Further, as of January 1, 1968, 13,976 architects or engineers had been certified as fallout shelter analysts by the Defense Department after completing a rigorous course of instruction conducted by universities or colleges or by contract agreement with individual instructors, mainly professors of architecture or engineering on university faculties.

The graduate student development program will be continued in fiscal year 1969 at selected universities which have faculty who have participated in the OCD summer institute program and are qualified as shielding analysis instructors. This will award approximately 20 fellowships to selected students when they pursue a course of study in radiation shielding or architectural studies related to protection from radiation. The American Institute of Architects and the radiation shielding subcommittee of the National Academy of Science recommended this program which permits outstanding graduate students, including former faculty members, to work on theses for advanced degree projects, and to pursue special studies of particular importance to civil defense. The specific areas of interest are radiation shielding, protective construction, environmental engineering, shelter planning, and other technical fields related to fallout protection.

[In thousands of dollars]

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Professional development courses	728	650	555
Faculty development	330	280	260
Student development	210	200	130
Workshops	64	150	0
Special projects	10	42	32
Total	1,342	1,322	977
Fallout shelter analysts trained (A. & E.)	2,630	3,000	2,300
Instructors qualified	129	140	100
Fellowships awarded	32	30	20

8. *Training materials: fiscal year 1967, $271,228; fiscal year 1968, $576,000; fiscal year 1969, $484,000*

Development, procurement, and distribution under this heading gives logistical support to all national civil defense instructional programs. For effective instruction to take place, the instructor must have the proper material and devices in hand at the right time and place. This fact imposes a need to stock instructional materials and to replenish such stocks as they are drawn down by State and local use. Action to be taken and work to be performed follows:

1. New training materials	($134,000)
(*a*) Emergency firefighting for the householder	100,000
(*b*) Executive development for local CD directors	27,000
(*c*) Emergency operations systems development and supporting programs	7,000
2. Replacement/reprint of existing training materials	(299,000)
(*a*) Civil defense management (CDM) training package	25,000
(*b*) Shelter management instructor (SMI) training package	2,000
(*c*) Shelter management package	54,000
(*d*) Emergency operations simulation sessions (EOSS) materials	7,000
(*e*) Staff college information materials	8,000
(*f*) Radiological defense officer (RDO) training package	6,000
(*g*) Radiological monitoring instructors (RMI) and radiological monitoring training package	27,000
(*h*) Personal and family survival booklet for use in adult education programs	70,000
(*i*) Labor training package	18,000
(*j*) Training films	48,000
(*k*) Other training materials	34,000
3. Home study courses	(51,000)

These courses are designed primarily as home study courses for persons who are unable to participate in other OCD sponsored training courses.

9. *Training evaluation and improvement; fiscal year 1967, $199,786; fiscal year 1968, $50,000; fiscal year, 1969, $150,000*

(*a*) During fiscal year 1968, the self-help emergency firefighting training package, developed under contract by the International Association of Fire Chiefs, will be field tested by 100 instructors from different geographical locations. It is estimated that approximately 5,000 students will be involved in the test at a cost of $50,000.

(*b*) Funds requested in fiscal year 1969 will provide for evaluation of the civil defense university extension program (CDUEP) to determine its effectiveness as a system. This will encompass the management of the program at the National and State level, the determination of training requirements, university instruction, followup on use of trained personnel, and contribution to operational readiness at the local level, $150,000.

10. *Community shelter planning training program: fiscal year 1967, $98,570; fiscal year 1968, $326,000; fiscal year 1969, $50,000*

Implementation of the community shelter planning program on a national scale requires training of three categories of people: (1) Urban planners who

produce community shelter plans, (2) National, State, and local civil defense officials involved in community shelter plans, and (3) State CSP officers and civil defense university extension program personnel involved with local governments in producing "nonfunded" community shelter plans.

Training that these individuals needs is of two types: (1) Instruction on how to apply general planning techniques in community shelter planning, and (2) training in civil defense policy, programs, and planning.

Through fiscal year 1967, 572 planners and 299 local officials were instructed in CSP techniques. In addition, 928 State and local people were instructed in special State and regional workshops.

During fiscal year 1968, OCD continued its community shelter planning (CSP) training by contract with a leading university. It is planned to conduct 27 CSP workshops, seminars, and conferences for approximately 800 planners and civil defense officials to provide for scheduled calendar years 1967-68 training, using the physical facilities of the Staff College and its instructors for CD subjects. The university staff will also support regular Staff College courses with CSP instruction.

Funds in the amount of $50,000 are requested for fiscal year 1969 to provide continuity of professional assistance in the planning field.

Mr. EVINS. Last year for training and education you had an appropriation of $13,174,000, and in 1969 you are asking for $8,277,000. This is broken down on page 20. You have $400,000 for operation of Staff College at Battle Creek, Mich.

Mr. ROMM. Yes.

UNIVERSITY EXTENSION PROGRAM

Mr. EVINS. In the university extension program you ask for $3.4 million. Is this all State universities?

Mr. ROMM. Yes, sir; we have contracts with at least one university in every State.

Mr. EVINS. What is the nature of those contracts?

Mr. ROMM. They are programs to teach civil defense skills. There is a schedule here on page 22 which indicates what they have been teaching and what they are scheduled to teach with fiscal year 1968 funds, and what courses they will be providing with fiscal year 1969 funds.

Mr. EVINS. One can go to Battle Creek, Mich., or the University of Michigan, and business and industry can get training on civil defense in either place?

Mr. ROMM. And all of the public officials and the people who require civil defense skills can get this training in their own State without coming to the OCD school.

We have found the university extension program has increased almost tenfold the annual training rate in civil defense skills across the country.

Mr. EVINS. Your tables do not show that.

In 1968 you had 450 conferences for public officials, and next year 200 conferences. For business and industry, you had 100 last year and 52 for 1969. They have been cut in half.

Radiological monitor courses go from 250 down to zero. Shelter managers go from 100 down to zero.

Mr. ROMM. The last two courses will be taken over by the adult education program, which is starting to teach skills in the high schools.

The point I am making is, prior to letting contracts with the universities, we used to have three OCD schools, one on the east coast,

one on the west coast, and at Battle Creek. We trained 5,000 people a year. These universities are now training about 50,000 people a year.

Mr. EVINS. What type courses are these?

Mr. ROMM. These are detailed courses in specific defense capabilities, courses on civil defense management, emergency simulations, shelter manager instructor courses.

OCD STAFF COLLEGE

Mr. JONAS. It looks like you are ready to close down that college.

Mr. ROMM. No, sir.

Mr. JONAS. It looks like it would be practical to do it.

Mr. ROMM. What we have at the college is really two functions: One is, this is the place where we have our curriculum development.

Mr. JONAS. I know, but you already have it developed now.

Mr. ROMM. There are continuing course developments.

For example, we have been developing courses in damage assessment capability, which the Staff College develops, and then will be taught elsewhere. All of the people at these universities who will be instructors in civil defense, also come to the Staff College to get that kind of training so they are able to teach these courses.

Mr. JONAS. I know, but the teachers in the extension courses of the universities are as smart as the people are at Battle Creek. There has never been any experience in this; it is all theory.

Mr. ROMM. There is experience in how to teach the course and what the course material is like. The people in the universities, prior to this effort, have never taught these courses before.

Mr. JONAS. The people at Battle Creek have never taught them before either.

Mr. ROMM. These are the people who actually develop the courses.

TRAINING EVALUATION

Mr. TALCOTT. How do they ascertain whether or not what they are teaching is correct? Do you ever evaluate any damage?

Mr. ROMM. We have a series of evaluation proposals. For example, this year we are in the process of evaluating the adult education instruction program in high schools, and we propose in 1969, to have an evaluation of this university extension program.

In addition, we have contract monitors who come from our regional offices to observe these courses and assure themselves that what is being taught is proper and the instruction good.

TRAINING IN DAMAGE ASSESSMENT

Mr. TALCOTT. Could not an ordinary official appraiser look at a piece of property before the bomb hits and after the bomb hits it and determine the damage?

Mr. ROMM. This is easily done long after the attack is over. The problem in damage assessment is to be able to get estimates early enough to have an impact on operational decisions.

Mr. TALCOTT. And you teach how to estimate damage quickly?

Mr. ROMM. What we are teaching is a series of standard computation techniques which apply weapons effects and maps and resources so assessments can be made rapidly.

Mr. TALCOTT. Have you had any experience in testing these methods?

Mr. ROMM. How accurate is the system?

Mr. TALCOTT. Yes.

Mr. ROMM. What we have done is to compare the manual damage assessment techniques versus the computerized simulation of what the damage is and see how close they are, and they end up fairly close.

OCD STAFF COLLEGE

Mr. EVINS. Who pays for the living expenses and the transportation of the student going to the college?

Mr. ROMM. Most of them are paid for by the local governments or their sponsors. We have matched funds in 1967 for 498 students in the amount of $40,228. In 1967, the Staff College actually had 2,842 students; we have matched funds for something less than a fifth of those.

Mr. EVINS. You want $320,000 for renovations and modifications. What is this?

Mr. ROMM. These funds are required for modifications, renovations as well as for housekeeping expenses at the Battle Creek school. There are also barracks-type structures there for student quarters.

Mr. EVINS. You want $50,000 for professional support and consulting services.

Mr. ROMM. This is a request to get professional help at the Staff College that is not there in sufficient numbers.

Mr. EVINS. How many members of the faculty are there at the Battle Creek College?

Mr. ROMM. There are 38 personnel. I am not sure as to the exact number of faculty members.

Mr. EVINS. Thirty-eight personnel assigned to the college, and about half of them are faculty people I suppose.

Mr. ROMM. I think that is about right.

Mr. EVINS. How long has the college been in operation?

Mr. ROMM. For approximately 15 years.

Mr. EVINS. And they have not become expert enough to teach the classes without bringing in more consultants and experts. You ought to go out there and make a lecture yourself once a year.

Mr. ROMM. I have.

Mr. EVINS. You are an expert. Secretary Resor could also go out and make a talk.

Mr. ROMM. You will find these courses last about 2 weeks apiece and they therefore may have as many as 50 courses during the year. It would be difficult for us experts to hit every course.

Mr. EVINS. It shows you have gone down from $80,000 to $50,000.

Mr. TALCOTT. How many graduates do you have?

Mr. ROMM. We had 2,842 students there in 1967. It runs about 3,000 a year.

Mr. TALCOTT. Each student for 2 weeks?

Mr. ROMM. It depends on the course. Some are 1-week courses and actually some courses are longer than 2 weeks. It averages 2 weeks.

Mr. JONAS. Over a period of 15 years, with that many per course it looks as if you would have had everybody in the United States trained by now.

Mr. ROMM. There are different courses. I think what we have trained——

Mr. JONAS. Do you have any repeaters?

Mr. ROMM. We have some repeaters, people who come and take more than one course.

STUDENT EXPENSE PROGRAM

Mr. EVINS. The student expense program is down to $30,000. How is that different from the other programs we had?

Mr. ROMM. The student expense program is the matching funds program for travel and per diem expenses for those qualified students who request this reimbursement.

Mr. EVINS. "University extension program, $3.4 million." Is that State extension?

Mr. ROMM. Yes, sir.

EMERGENCY INFORMATION

Mr. EVINS. We will look at the next item, "Emergency information."

You are asking for $1.7 million for emergency information. You have been providing emergency information for several years. What is the difference in this emergency information and that which you previously provided?

Mr. ROMM. This is really a continuation of it. The big pieces of this include, first, the publication of these community shelter plans when they are completed. These are the newer ones. I have here one copy each of several selected plans published. This particularly good one is for Waco and McLennan Counties in Texas.

This publication provides instructions to the people of these counties and communities when the shelter planning is completed. In effect, it tells them what to do and where to go in the event of a nuclear attack.

CIVIL DEFENSE INFORMATION PUBLICATIONS

Mr. EVINS. You are requesting $800,000 for information and guidance.

Mr. ROMM. The community shelter plans are included in the $800,000, as well as other public information publications on emergency activities. I have here the bestsellers in the public information area.

This fallout protection booklet is some years old and is going to be superseded by "In Time of Emergency." This, plus these other books, are actually the ones that are in most demand from the public. These two will be superseded by the one booklet.

Mr. EVINS The "Handbook for Emergencies" is the popular one?

Mr. ROMM. This, plus this, the "Handbook on Fallout Protection" and the "Handbook for Emergencies."

This one on family survival is really the textbook for adult education courses. We have also found this is in great demand as a public

information document. It has a lot more detail than the other two and is a fine text.

This one, "Family Survival Plan," is the fourth bestseller and was developed by the Extension Service of the Department of Agriculture.

Mr. EVINS. All of this comes under the $800,000 for guidance and information?

Mr. ROMM. Yes.

Mr. EVINS. You have $374,000 to keep the public informed on the status of the programs by means of films and information bulletins.

Mr. ROMM. We have some very successful films.

COMMUNITY SERVICES

Mr. EVINS You have $11,000 to continue to maintain a library of publications and films.

And for community services you have $350,000.

Is this the 1967 program on page 33?

Mr. ROMM. 1969.

Mr. EVINS. You mention fiscal year 1967.

Mr. ROMM. Yes. The justification related to 1967 tells you how many people visited our exhibits.

Mr. EVINS. Major exhibits, $40,000. They are to be at community fairs?

Mr. ROMM. Museums as well.

Mr. EVINS. You put the exhibits in museums?

Mr. ROMM. The most successful exhibits have been in the science museums. We had a large exhibit in the Smithsonian and at the Seattle Museum of Science.

Mr. EVINS. Do you have to continue to pay the Smithsonian once you get your exhibit in there?

Mr. ROMM. No, sir. The space for our exhibit in the museum is free. We have to pay for procurement and installation of the exhibit.

Mr. EVINS. Once you get it in there, you do not have to keep on paying them, do you?

Mr. ROMM. No, sir.

Mr. EVINS. They have separate appropriations for maintenance?

Mr. ROMM. When we take it out, the exhibit requires maintenance. As it is moved from place to place, it has to be maintained.

Mr. EVINS. Portable exhibits, $60,000. Where are your portable exhibits?

Mr. ROMM. They are usually at the regional offices and available to States on demand.

We have pictures of what our exhibits look like. I think they might be interesting to the committee. They are very effective. A tremendous number of people get to see them.

DUAL-PURPOSE CIVIL DEFENSE CAPABILITY

Mr. TALCOTT. What do you mean by a dual purpose? Does this mean natural disaster and nuclear disaster?

Mr. ROMM. Yes. There is also an emergency health exhibit.

Mr. TALCOTT. I am not talking about just the exhibits. You have mentioned dual-purpose shelters.

Mr. ROMM. That means it has a peacetime and emergency use. For example, shelter supplies were used in the Alaska flood, and prior to that in the Alaska earthquake, and in Hurricane Beulah.

Mr. TALCOTT. It does mean the dual purpose of peacetime purposes for natural disasters and wartime purposes for nuclear attack?

Mr. ROMM. Yes.

CIVIL DEFENSE IN CIVIL DISORDERS

Mr. TALCOTT. How about a triple program, for civil disorders, too? Are you into that field yet?

Mr. ROMM. The only use of shelter supplies or equipment that I am aware of was in the civil disorders in Detroit where the stores closed up and they could not do any shopping. Our shelter supplies, the food packets, were set out on corners in Detroit and the people used them to feed themselves until they could get the stores reopened. Our emergency operating center communications capability have also been used by cities in these civil disturbances.

Mr. TALCOTT. I think the residents of Washington, for instance, right now would probably be more interested in a shelter that would protect them from a roving mob rather than from a nuclear blast.

Do you have any program for that?

Mr. ROMM. No, sir; that is not wthin the purview of the act which covers my activities. But there is no preclusion of using our capabilities for any kind of an emergency. That is up to the local government.

(Off the record.)

Mr. EVINS. There appears to be no program in the Office of Emergency Planning and no program in the Office of Civil Defense for riot problems that are threatening, but there is some spin-off advantage.

Mr. TALCOTT. You do not have a plan for this kind of emergency. You have some flop-over from nuclear emergency plans that maybe can be used and maybe cannot be used. There might be some equipment available, but there is nothing specifically for this type of emergency.

Mr. ROMM. This does not mean there are not plans in each city and State and within the military to support them on request.

EXHIBIT MAINTENANCE

Mr. EVINS. You want $88,000 for maintenance and onsite expenses. This covers the cost of setting up and tearing down exhibits?

Mr. ROMM. And moving them around, transportation.

INDUSTRIAL PARTICIPATION

Mr. EVINS. Then you want $150,000 for industrial participation. If you are helping industry's plants and their employees, it looks like they would be glad to have you come in and lecture to them and would pick up some of the tab.

Mr. ROMM. They do a tremendous amount of this themselves. This is for the publications to help them do their jobs.

Mr. EVINS. Read the names of the publications into the record that you furnish industry.

Mr. ROMM. These are the four best sellers of last year. These are "Industrial Mutual Aid Association for Civil Defense," "Industrial Defense Seminars," "How to Organize and Plan," and "Protection of Vital Records."

For example, this one is an illustration of what we do in providing specific guidance on civil defense aspects of the waterworks operation, which would be applicable to any kind of emergency.

TECHNICAL INFORMATION

Mr. EVINS. You are asking another $400,000 for technical information besides the information you are providing to the States, cities, and industry. Is this new information on radiation shielding, fallout protected schools, shelter design in new buildings, shelter through architectural design, community development and civil defense, and the national directory of qualified fallout shelter analysts?

Mr. ROMM. Yes, sir.

I would like to show you these large textbooks. Shelter design and analysis comes in five different volumes.

Mr. EVINS. If you have those published, why do you need $400,000 more?

Mr. ROMM. Our training program reaches about 2,000 to 3,000 architects and engineers each year. Up to now we have given advance instruction to architects and engineers in shelter design and shelter analysis. Fifteen thousand have gone through the course and completed it successfully.

Mr. EVINS. These architects are highly trained. They are specialists and after 18 years I expect they know how to draw a fallout shelter. This is subsidizing the architects.

Mr. ROMM. I do not think it is subsidizing the architects. What we are doing is providing him with a skill which aids in getting us more fallout protection in the country. What we are doing is improving our shelter and defense posture with their skills.

DAMAGE ASSESSMENT

Mr. EVINS. We will turn to damage assessment. I see you are asking for $1.2 million. This is on page 35.

Damage assessment is an essential element of the civil defense program. Pre-attack, it is used to develop the best possible estimates of the potential range of damage to people and resources, based upon varying enemy capabilities and civil defense postures.

The reports of nuclear detonations will come from local, State, regional, and national emergency operating centers. State and local assessments generally will be manual computations. This is after the fact, is it not?

Mr. ROMM. Yes, sir.

Mr. EVINS. Computer operations, $1 million.

Maintenance of data base, $200,000. That is your $1.2 million.

Do you want to tell us why you need this $1.2 million?

Mr. ROMM. Most of it is for the operation of the computer, and we engage in continual studies of the damage-limiting capabilities of a shelter program.

These studies are designed to fit in with the total Defense Department damage-limiting study. We engage in the passive defense aspect. We have continuing studies.

Mr. EVINS. These are studies on damage assessment and damage by radiation fallout. The Atomic Energy Commission has made studies on that for years. They have numerous studies on fallout damage.

Mr. ROMM. What we do is take the information they have developed and relate it to a whole series of hypothetical attacks. War games in effect.

For example, right now in this program we are involved in a three-way study—the JCS, the OEP, and ourselves. The calculations are so complex and so broad in scope, across the whole national structure, for example, people, housing, capabilities to support them post attack, what happens to industry, that we actually divide up the work between these three groups.

Mr. EVINS. We had testimony the other day that the Defense Department had surplus computers and had turned some over to GSA to dispose of and put in other Government agencies. Yet you want a million dollars. Can't you get one of the Defense Department computers?

Mr. ROMM. This does not buy a computer.

Mr. EVINS. What does it do?

Mr. ROMM. This is, for the most part, reimbursement to the Corps of Engineers for the operation of the computer facility.

Mr. MARSH. I assume these studies are based on the possibility of a nuclear strike by missiles from the Soviet Union. Right or wrong?

Mr. ROMM. Yes, sir.

Mr. MARSH. Also, the missile system of the Chinese?

Mr. ROMM. Yes.

Mr. MARSH. I notice in your statement you say the antiballistic missile system, the Sentinel, is devised because of the Chinese threat.

Mr. ROMM. It is designed to meet the Chinese threat.

Mr. MARSH. If you are making damage assessments on the basis of Soviet nuclear strikes, what is the application of the Sentinel to Soviet strikes?

Mr. ROMM. Could I go off the record?

Mr. MARSH. I think it ought to be on the record, because in your statement you say the Sentinel is designed because of the Chinese threat. I want to know whether it has application to the Soviet threat.

Mr. EVINS. Put it on the record and if necessary, it can be taken out.

Mr. ROMM. The fact is our studies just completed this past year in December indicate that the Sentinel system as proposed to be deployed provides a real capability against a then projected Soviet threat. The Sentinel system plus the projected civil defense system would save a considerable number of people. It will not eliminate the attack. The Sentinel system will not avoid damage from Soviet attack nor will the civil defense program avoid damage from Soviet attack, but it does limit damage and can together save tens of millions of lives.

Mr. MARSH. From Soviet attack as well as Chinese?

Mr. ROMM. That is right.

Mr. MARSH. Why does the statement say it is designed for the Chinese threat?

Mr. ROMM. The Sentinel system deployment decision was actually directed toward the potential Chinese threat in the mid-1970's. With that system, it practically eliminates any capability on the part of the Chinese missiles to arrive in this country.

That is not true with the Soviet threat. It will not eliminate Soviet-arriving missiles but it will take its toll. Any defense helps.

Mr. MARSH. It does have application then?

Mr. EVINS Mr. Director, what do you expect to find out in damage assessments in the next year for $1.2 million that you have not already determined?

Mr. ROMM. This will be our continuing input to the DOD damage limiting studies. It continues to measure what the enemy threat will do against a whole variety of programs. It tests the effectiveness of the programs we have proposed. It tests the effectiveness of alternate programs and literally helps design and maintain this program on an up-to-date basis.

EMERGENCY OPERATIONS SYSTEM DEVELOPMENT

Mr. EVINS. Let's take a look at the emergency operations system development, for which you are asking $750,000.

We will place in the record pages 38 through 41.

(The pages follow:)

Emergency operations systems development

Fiscal year 1967	$1,877,077
Fiscal year 1968	1,000,000
Fiscal year 1969	750,000

The emergency operations systems development program bridges the gap between research and operations. Under it, civil defense doctrine, policies, plans, programs, and systems are developed from the research or concept stage through prototype systems for operational deployment. On the basis of research and study, organization and procedures for the total operating civil defense program are proposed to State and local governments. These proposals are generally field-tested to confirm their feasibility or to test the workability of recommended local operational systems.

Emergency operations systems development tasks are generally carried out in two phases. Phase I work includes distillation of relevant existing research; quantitative evaluation of problems resulting from light, medium and heavy attacks; analysis of existing State and local capability to cope with these problems; and recommendation, based on cost-effectiveness analysis, of Federal-State-local programs concluded to be necessary. Phase II work includes field-testing, as necessary; production of recommended guidance materials; development of detailed training requirements; and development of recommended management techniques for operational local systems.

People, facilities, equipment and supplies are the basic ingredients of State and local civil defense systems. Emergency operations systems development seeks to provide the systems which will mesh all of these ingredients in the most economical and effective ways for emergency operations.

Current emphasis includes developing systems for the orderly increase of civil defense readiness in periods of heightened international tensions and providing guidance to State and local governments on actions which may be taken during such a period.

Specific projects for fiscal year 1969 include the following:

(a) Local planning for civil defense supporting services, $190,000

The results of EOSD work in previous years have included the community shelter planning (CSP) program, as well as guidance on local emergency planning in such fields as maintenance of law and order, fire defense, and shelter management. A local CSP project results in a plan for the best use of the fallout shelter existing in the community, and thus provides information for the citizens of the community on where to go and what to do in case of nuclear attack. It also provides a basis for the police, fire, and related local emergency planning needed to insure maximum lifesaving in the community in case of attack upon the United States. Emergency planning by local police, fire, health, and other departments is thus a necessary and logical follow-on to the OCD shelter surveys and the OCD-assisted community shelter planning program, in that the emergency plan specifies what local government forces should do to assist the citizens.

This project involves field testing OCD planning guidance in approximately 5 jurisdictions which have completed community shelter planning projects. Representatives of the professional organizations of fire and police chiefs and of other local government services, as well as experts on radiological defense and shelter management, will assist local government departmental representatives to develop emergency plans for their jurisdictions, based upon plans developed during local CSP projects for the use of locally available shelter. Results of this project will include determination of (a) optimum methods of implementing emergency planning in communities nationwide, with emphasis on the local planning effort required, as well as (b) refinement, if necessary, of the current planning guidance.

(b) Improvement of emergency direction and control, $75,000

This project provides for refinement of OCD emergency organization and procedures and the further development of the local-State-OCD concept of emergency operations during fiscal year 1969. This project includes work with State and local governments and OCD regions as well at the national level, and will cover transmission and display of essential information received from States and localities for use by field and national offices of Federal agencies, including military headquarters, as well as transmission of information from OCD to State and local governments.

(c) Increased readiness simulation, $100,000

The Office of Civil Defense has developed and issued a number of checklists of increased readiness actions which State and local governments can take in a period of increased international tension. This increased readiness guidance covers actions in such areas as direction and control, emergency information, accelerated training in civil defense skills, radiological defense, shelter management, fire defense, maintenance of law and order, and school and industrial readiness. In order to permit further refinement of this guidance and to develop more precise knowledge of the degree by which the civil defense operational readiness of State and local governments can be increased during periods of tension of varying lengths, this project will employ simulation techniques with key officials of selected cities, to evaluate (*a*) what can be accomplished over specified periods of time during a crisis in each of the readiness areas; (*b*) the manpower and material required to attain these increased readiness postures; and (*c*) the extent and nature of preemergency planning required for effective performance in each area.

(d) EOSD Scientific and Technical Support, $75,000

This project continues the support of the National Academy of Sciences/National Research Council Committee on Civil Defense under which the committee (*a*) furnishes advice and recommendations as to whether specific conclusions reached and doctrine adopted are based on scientific fact; (*b*) furnishes consulting service to OCD in the fields of science, technology, etc., as may be required; (*c*) assists in establishing and coordinating working relationships with various pertinent research undertakings having a bearing on the problems presented; and (*d*) arranges periodic meetings and provides reasonable notice to OCD of its findings. The advisory Committee's responsibilities have been carried out through five subcommittees: (1) radiation shielding, (2) design of protective structures, (3) blast and thermal effects, (4) fallout phenomenology, (5) organization and operation of civil defense systems.

(e) Field Testing Civil Defense Materials for Public Safety Forces, $50,000

Based on EOSD work to date in fire defense, maintenance of law and order, and control and assistance of movement (with particular reference to movement to shelter), OCD and the national professional organizations of fire and law enforcement officials have developed civil defense guidance materials and training packages to inform and train public safety officials and personnel on the special problems they would face under nuclear attack conditions. This project provides for the cooperative field testing of this guidance and training material in selected communities prior to possible nationwide distribution. It is anticipated that cooperating agencies would include the International Association of Fire Chiefs and the International Association of Chiefs of Police in addition to the participating communities.

(f) Operation and development of integrated management information system (IMIS), $260,000

The OCD integrated management information system (IMIS) will enter its fourth year of operation in fiscal year 1969. IMIS is based upon the submission of an annual program paper by each of over 4,200 local governments (including over 85 percent of the national population), plus a semiannual report of progress. The program paper is designed primarily as a local management device, and specifies—in some 70 specific work areas, such as stocking public shelters, and training radiological monitors—work required locally, work completed, work remaining, and work to be done during the fiscal year. Program paper data are summarized and management reports prepared by the national civil defense computer facility. Emphasis in fiscal year 1968 is on developing aids and reports for OCD, State, and local program managers, to assist them in realizing maximum increases in life-saving capability for the effort which can be invested in building local emergency readiness. This fiscal year 1969 project will, in addition to providing for the operation of the current system, develop methods for translating numerical management data into graphs, narratives, and other formats most useful to local, State, and OCD program managers. Work will include extensive field testing with users in local jurisdictions of varying sizes and types, to ensure that the reports and formats developed are valid and are of maximum use to them.

Mr. ROMM. Mr. Evins, this effort is very much like the Army Combat Development Command. It bridges the gap between what comes out of research and the application to operational problems in the field.

TESTS AND EXERCISES

Mr. EVINS. This is a testing of your civil defense plans?

Mr. ROMM. Yes.

Mr. EVINS. How effective are they? You state that:

Current emphasis includes developing systems for the orderly increase of civil defense readiness in periods of heightened international tensions and providing guidance to State and local governments on actions which may be taken during such a period.

Mr. ROMM. We tested this in detail in our exercise last year and we now have a system which we think is pretty good. It is a set of advisory actions to be taken at the local government level, by different departments of local government, and these actions are on an increasing scale of readiness, so hopefully the response can be directed to meet the situation that is at hand.

Mr. EVINS. I had a man make an independent review of your budget to give me another objective view and he wrote a comment here, "How about cooling off these tensions?" You just keep them excited all the time.

Mr. ROMM. I would be happy to have tensions cooled off, but while we have them I have to get this increased readiness system prepared.

Mr. EVINS. Improvement of emergency direction and control, $75,000.

Increased readiness simulation, $100,000.

Mr. Director, you ought to have your system organized and ready by this time.

EOSD scientific and technical support, $75,000.

Field testing civil defense materials for public safety forces, $50,000.

Operation and development of integrated management information system, $260,000.

BROADCAST STATION PROTECTION PROGRAM

We will take a look at the broadcast station protection program on page 42, $180,000.

We will insert pages 42 and 43 in the record.

(The pages follow:)

Broadcast station protection program

Fiscal year 1967	$1,156,978
Fiscal year 1968	806,000
Fiscal year 1969	180,000

The emergency broadcast system was developed by the Federal Communications Commission to provide the President, the Federal Government, and State and local authorities a means of communicating with the general public through nongovernment broadcast stations, preattack, transattack, and postattack. Each emergency authorized broadcast station operates at its assigned frequency and normal power. The Federal Communications Commission has organized operational Area, State, Regional, and National Industry Advisory Committees to develop emergency broadcast system plans at each government level. As a major user of the emergency broadcast system and representing State and local civil defense, the Office of Civil Defense places its requirements upon Federal Communications Commission and the National Industry Advisory Committee. To provide increased assurance for sustained operations under fallout conditions, the Office of Civil Defense, during the period of 1962–67, arranged for agreements with approximately 630 radio stations to pay the costs of providing fallout protection, emergency power generators, radio links to local governments, and emergency programing equipment. Ultimately, 658 radio stations will have the protection and equipment which will provide for complete national coverage. For a station to be selected, it must provide broadcast coverage to substantially populated areas and be a part of the appropriate State emergency broadcast system plan.

The President by memorandum of December 21, 1966, authorized OCD to disseminate the attack warning message over the emergency broadcast system. The Presidential authorization will insure rapid transmission of warning to the public.

The Office of Civil Defense broadcast station protection program consists of three elements:

(*a*) Fallout protection to provide an austere but adequate area for the minimum personnel required to operate the stations.

(*b*) Emergency power to provide the stations with a capability to continue operation if normal power is disrupted.

(*c*) Radio program links and associated equipment to provide communications equipment required to transmit local, State, and regional programing from seats of government (points of entry) to the stations and on to the public.

Six hundred and thirty stations were included during the period 1962–67. In fiscal year 1968, OCD intends to increase the number of stations included by 28, at a cost of $464,800, for a cumulative total of 658. The average cost of stations to be included in the program will be approximately $16,600, and will provide for the addition of selected remote control equipment for the operation of emergency generator equipment.

Funds in the amount of $69,600 are also required in fiscal year 1968 for providing the remote pickup units (29) required between protected stations and emergency operating centers as the latter are completed. Remote pickup units

will be restricted to the 658 protected AM broadcast stations. An additional $88,000 is required during fiscal year 1968 to provide emergency generators (8) for those broadcast stations included during the early years of the program that were not provided such equipment.

Reimbursement to the Corps of Engineers for supervision of construction and installation of equipment will require $183,600 during fiscal year 1968.

Funds requested for fiscal year 1969 will provide for—

(a) 20 additional remote pickup units at $2,350	$47,000
(b) 3 emergency power generators for stations where the original agreement did not include such equipment at $11,000	33,000
(c) Reimbursement to the Corps of Engineers for supervision of construction and installation of equipment currently in process and/or budgeted for	100,000
Total	180,000

Mr. ROMM. This program will continue developing, but no more new stations will be added after fiscal year 1968.

Mr. EVINS. How many stations are cooperating with your system currently?

Mr. ROMM. We have 630 that have been financed through fiscal year 1967, and another 28 are scheduled to be in the program in 1968. That will complete our requirement.

Mr. EVINS. These radio and television stations are given an enormous monopolistic operation by the Government. They ought to be willing to provide a small public service, and the Commission should call on them for public service.

Mr. ROMM. There are over 2,400 stations in the emergency broadcast system.

Mr. EVINS. Are these commercial stations?

Mr. ROMM. Yes. This is for commercial broadcast stations. Selected ones are provided fallout protection, emergency power if they need it, and links to local governments. These stations are provided this capability so that they will be able to operate in a fallout environment. FCC tests indicate these 658 stations will provide almost complete coverage for the country in a fallout environment.

Mr. EVINS. It must be pretty effective because you have gone down from $1,156,000 in 1967, to $180,000 for 1969.

Mr. ROMM. This fiscal year 1969 amount of $180,000 provides supervision and a minor amount of equipment for this program.

OTHER EMERGENCY OPERATIONS

Mr. EVINS. You also have other emergency operations, $139,000

Mr. ROMM. That is the Red Cross advisory service.

Mr. EVINS. This will provide technical assistance from the Federal Communications Commission in connection with the broadcast station protection phase of the emergency broadcast system.

Mr. ROMM. There is no money requested in fiscal year 1969 for this purpose. The FCC has been providing us with advisory services for the emergency broadcast system.

Mr. EVINS. Why are the advisory services being stopped?

Mr. ROMM. All of the stations will be selected by the end of fiscal year 1968.

Mr. EVINS. It has been discontinued.

Mr. ROMM. That job for us is complete. They have their own emergency function which they will continue to do, but the selection

of stations for us and their advice on these stations will have been completed by the end of fiscal year 1968.

Financial Assistance to States

Mr. Evins. Let us turn to financial assistance to the States.

Mr. Romm. There are no increases there except in the personnel and administrative expenses.

Mr. Evins. The personnel and administrative expenses are shown on page 47. You are going up from $18.5 million to $19.1 million.

Mr. Romm. Yes.

Mr. Evins. We will place pages 47, 48, and 49 in the record.

(The pages follow:)

Personnel and administrative expenses

Fiscal year 1967	$17,376,500
Fiscal year 1968	18,500,000
Fiscal year 1969	19,100,000

The objective of the personnel and administrative expenses program is to assist States and other political subdivisions to develop a capability for nonmilitary defense to meet the needs created by an emergency. This program provides a nationally organized and coordinated capability for conducting civil defense operations at State and local level during an emergency. With Federal assistance provided through this program on a matching funds basis, States and other political subdivisions are expected to provide minimum numbers of personnel to fulfill adequately preemergency planning and training requirements. The main intent of this program is to increase operational capability at all levels in support of the many facets of the national civil defense program.

The complexity of the civil defense program and its divergent structure at the various levels of government calls for a professional staff and for a cooperative relationship between Federal, State and local government. The Federal matching funds provide the means for Federal sharing of this management burden at State and local level and assures a disciplined professional effort focused on national objectives.

As of the end of fiscal year 1967, all 50 States, District of Columbia, four territories, and 1,848 local governments throughout the country were provided Federal matching funds for personnel and administrative expenses. The population of the counties and cities where these funds are being used to administer a civil defense program amounts to over 120 million people. These civil defense functions of government, in following the national civil defense program, serve primarily to provide protection for the people against the effects of enemy nuclear attack and as a byproduct, prepare against the effects of natural disaster.

As indicated above, the Federal Government shares in the cost of employing professional people (and their clerical support) who plan and coordinate the special activities which are not ordinarily a part of government; for example: the warning system, the fallout shelter system, the radiological monitoring system and measures for emergency direction and control. The civil defense staffs are skilled planners and local government technicians serving their governments, operating under the direct authority of their elected officials. To a substantial degree, the civil defense personnel who are not in strictly clerical positions are performing a coordinating or specialist function, involving the training or preparation of other regular elements of government for emergency functions. This group of civil defense employees, amounting to 4,234 full time and 1,581 part time at the end of fiscal year 1967, are in turn responsible for the planning, organization and training of some 2,750,000 State and local government employees and volunteers who carry out the civil defense programs of the regular departments of governments. All departments of government are to be used to carry out the civil defense program, and civil defense personnel do not duplicate the functions of these regular departments. Examples of activities often not handled by other departments are stocking fallout shelters, recruiting and training shelter managers, establishing radiological defense systems, including recruiting and training radiological monitors and radiological analysts, establishing a public warning system and the planning for and maintenance of a central Emergency Operating Center.

Employment of State and local personnel in this program is under merit standards comparable with those applied in the other Federal grant programs.

By the end of fiscal year 1968, it is anticipated that the number of localities will increase to approximately 2,030.

Funds in the amount of $19.1 million are being requested for fiscal year 1969 to meet the estimated demands of State and local governments as they continue to expand their base of professional civil defense employees who can act in a natural or nuclear disaster under a coherent program. An example of the list of work elements that are included in the annual local civil defense program paper, which is reviewed and approved by OCD prior to the commitment of Federal funds, include the following:

1. Maintain statistical inventory of shelter spaces.
2. Obtain shelter license or agreement form from building owners.
3. Mark public fallout shelter.
4. Install and maintain emergency supplies in public fallout shelter.
5. Conduct inventory and inspection system for shelter supplies.
6. Establish public warning system.
7. Establish system to alert key government officials.
8. Establish emergency operating center and procedures for its operation.
9. Maintain and train support personnel for emergency operating center.
10. Establish radiological monitoring system.
11. Receive, distribute and maintain inventory of radiological monitoring equipment.
12. Establish procedures for and periodically test emergency communications system.
13. Establish working relationship with local radio broadcast station and develop emergency broadcast procedures.
14. Prepare and maintain emergency public information program to tell people where to go and what to do.
15. Maintain relationship with industry for employee programs on civil defense preparedness.
16. Coordinate and participate in civil defense adult education training.
17. Coordinate and participate in rural civil defense program conducted by the U.S. Department of Agriculture.
18. Coordinate and participate in medical self-help training conducted through the Public Health Service.
19. Organize and conduct radiological monitoring within city departments and in support of public shelter requirements.
20. Assist departments such as police, fire, and medical to recruit and train reserve or auxiliary personnel.

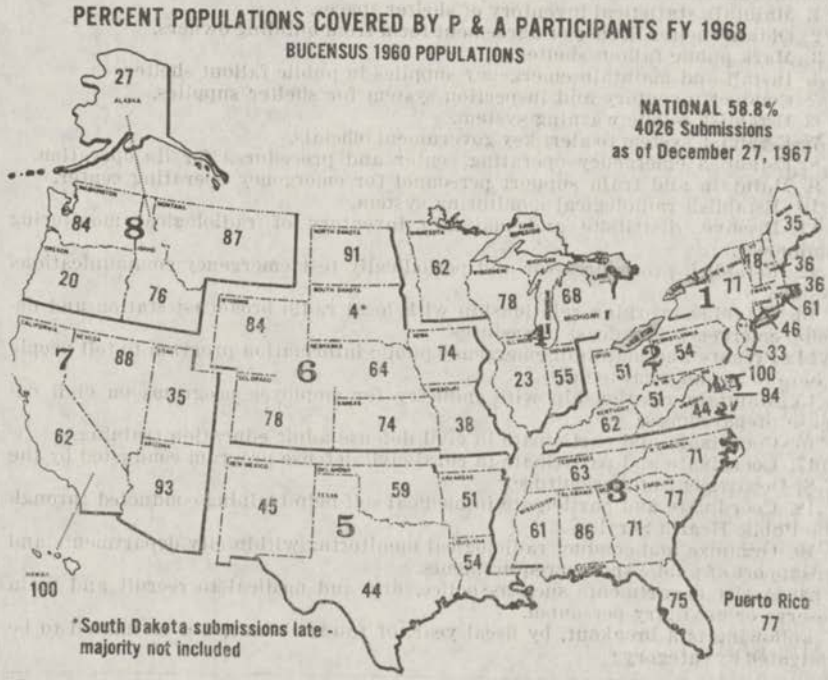
Following is a breakout, by fiscal year, of funds obligated or estimated to be obligated by category:

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Number of participants:			
State	50	50	50
District of Columbia and territories	5	5	5
Subdivisions	1,848	2,030	2,040
Total	1,903	2,085	2,095
Personnel strength:			
State	1,609	1,610	1,610
District of Columbia and territories	197	200	200
Subdivisions	4,009	4,375	4,395
Full time	4,234	4,515	4,530
Part time	1,581	1,670	1,675
Total	5,815	6,185	6,205
Obligations:			
State	$6,802,183	$6,808,000	$6,954,000
District of Columbia and territories	417,936	427,000	445,000
Subdivisions	10,156,381	11,265,000	11,701,000
Total	17,376,500	18,500,000	19,100,000
Personnel services	(14,603,076)	(15,540,000)	(16,200,000)
Travel	(960,225)	(1,017,000)	(1,000,000)
All other	(1,813,199)	(1,943,000)	(1,900,000)
Average salary: Federal share	2,511	2,512	2,611

Mr. ROMM. Mr. Evins, could I provide you with a map which shows the distribution of population covered by this personnel and administrative expense account?

Mr. EVINS. Yes. The administrator is showing to the committee "Percent Population Covered by P. & A. Participants, Fiscal Year 1968." We will insert the map at this point in the record.

(The map follows:)



Mr. ROMM. That is not all of them. That is as of the end of the year. We are still getting them.

Mr. EVINS. You show your population coverage?

Mr. ROMM. By those jurisdictions receiving these personnel and administrative expense financial support.

Mr. EVINS. This is money for city hall people.

Mr. TALCOTT. Is there any matching of this money?

Mr. ROMM. Yes, we match up to 50 percent. We have not been able to match them for all expenses ——

Mr. EVINS. All 50 States, the District of Columbia, four territories, and 1,848 local governments throughout the country were provided Federal matching funds for personnel and administrative expenses.

The population of the counties and cities where these funds are being used to administer a civil defense program amounts to over 120 million people

What about the other 80 million people?

Mr. ROMM. They live in jurisdictions who either do not want Federal matching funds or where there is no civil defense program which qualifies for maching funds. During fiscal year 1968, we had to turn away 157 political subdivisions who wanted to enter the pro-

gram but we did not have enough money to provide matching funds to them.

This is a critical part of the program. This is the place where the capability is increased at the local level, and we have not been able to meet their requirements.

CIVIL DEFENSE PROGRAM PAPER

Mr. EVINS. All of this money is committed to the States and cities on a 50–50 matching basis for jobs and employment.

They prepare you a program paper. How often do they submit this paper, once a year?

Mr. ROMM. They submit it once a year and they report progress on it every 6 months.

Mr. EVINS. This program paper shows the statistical inventory of shelter space in the area?

Mr. ROMM. And all of their programed activities.

Mr. EVINS. The number of fallout shelters are marked, as are the number of places that have emergency supplies.

Mr. ROMM. I would like to show you what the program paper looks like. The past history is provided to them and they tell us what they propose to do for the following year. This is reviewed at the State level and by our regional offices. When the program paper is approved, they are eligible to receive Federal assistance. Every 6 months they report progress.

Once this system gets shaken down, the margin of error is kept small because the computers have some internal checks in them to verify validity of the data. I think it is a very good management tool, not just for us but also for the local governments who review the programs in local civil defense work.

Mr. TALCOTT. What if they do not show progress, are they cut off?

If they do not develop more shelters or more radio stations, are they cut off?

Mr. ROMM. We have not reached that stage in very many places. New construction keeps coming. They still have to mark the shelters that are located, they have to stock the shelters. Only about 50 percent of those located so far have been stocked.

There is a continuing training requirement. The program is a continuing program, capability continues to be improved each year.

Mr. EVINS. This is the highest level of funding for city hall jobs?

Mr. ROMM. Counties, States and cities.

EMERGENCY OPERATING CENTERS

Mr. EVINS. The next item is emergency operating centers.

You have $4½ million, the same as last year.

Mr. ROMM. Yes, sir.

Mr. EVINS. We will put in page 52.

(The page follows:)

Emergency operating centers

Fiscal year 1967	$3,970,535
Fiscal year 1968	4,500,000
Fiscal year 1969	4,500,000

An emergency operating center (EOC) is a location within an existing building or a specially constructed facility where the decisionmakers of State or local government assemble in peacetime or wartime emergencies to direct the required survival and recovery actions. EOC's which qualify for Federal matching funds provide a degree of protection against the effects of nuclear weapons, have auxiliary electric generators, and special communications with all elements of emergency government. During recent emergencies, Governors and mayors activated their EOC's as the focal point for gathering information and for direction and control. In addition to its emergency use, the EOC is used on a day-to-day basis in most communities as the headquarters for the civil defense staff and other elements of emergency government such as fire and police.

The importance of the EOC to local government is evidenced by the fact that approximately 1,900 EOC's have been designated by State, county, and municipal governments without Federal financial assistance. Although many of these do not meet the OCD recommended standards, the fact that they are in use indicates that local governments recognize the need for centralized emergency direction and control. OCD is in the process of making fallout protection and communication analyses of each of these so as to recommend specific improvements.

An emergency operating center is the final product of a cycle that includes feasibility study, architectural design, construction, and equipping. Total time for this cycle varies according to size, location, relationship to other construction, and budgeting of funds by applicant governments. The cycle for new construction is generally from 3 to 4 years. Thus, newly constructed EOC's which were completed in fiscal year 1967 were initiated, for the most part, in fiscal year 1963 and fiscal year 1964.

The average Federal share of the construction cost of EOC's initiated in fiscal year 1962 was $102,000. Those initiated as late as fiscal year 1964 are being completed at an average Federal share of $63,000. OCD emphasis on low-cost methods, on use of space for both day-to-day and emergency purposes, and on use of existing space, has been the primary reason for this reduction. It is estimated that EOC's initiated as new construction during fiscal year 1965 will be completed at an average Federal cost of about $34,400. EOC's initiated in fiscal year 1966 will average $27,000, and those initiated in subsequent years will be completed at an average Federal cost of about $25,000. As costs lower, the development of an adequate EOC comes into reach of an increasing number of communities.

Funds requested for fiscal year 1969 will provide for effort related to EOC's initiated in prior years as well as for those initiated during the fiscal year.

STATUS OF PROGRAM

Mr. ROMM. The average cost of these centers has come down considerably since 1962. The Federal share used to cost an average of $100,000 each.

Mr. EVINS. What is the status of this program?

Mr. ROMM. We have now available, completed, 2,255 of these emergency operating centers, and 677 in process.

Mr. EVINS. Tell us again how many are completed and in operation.

Mr. ROMM. 2,255 completed and in operation. We will match funds for localities that want to develop their own emergency operating capability.

Our estimate is that probably 4,000 to 5,000 communities are large enough to require this kind of capability.

Mr. EVINS. Does it require the approval of the mayor or the city council?

Mr. ROMM. Yes. It includes all the capability of government to operate in an emergency. It is like a command post.

Mr. EVINS. You have about 2,250 centers already approved?

Mr. ROMM. My estimate would be we are about halfway through. Our figures indicate that these EOC's are in places with population

of 108 million people. I do not think we will ever cover all 200 million people. Each time we invest in one of the smaller towns and cities that want to come into this program, we get more people in the program but less people for each unit of investment. The unit dollar cost of this program has, however, come down.

It used to cost an average of $102,000 matching funds for each emergency operating center.

Mr. EVINS. Mr. Romm, you get information by radio, television, telephone, and other communications media. When will you reach the saturation point?

Mr. ROMM. As long as the country continues to grow, I do not think we will ever get saturated. There is a capability at the local government level to operate in an emergency. I think that with the number of natural disasters that we have had and the possibility of civil disturbances——

Mr. EVINS. We have the Red Cross, Corps of Engineers, and many others moving in.

Mr. ROMM. This is a government function at the local level. I wonder if I could provide for the record a letter which Governor Connally sent to our director of region 5 on this subject. I think that you will find his view of this interesting.

Mr. EVINS. The committee will consider Governor Connally's request.

Mr. Administrator, have you been putting on pressure to the counties and cities to write to Congressmen?

Mr. ROMM. No, sir.

Mr. EVINS. All the letters come back the same way, "Please have this letter inserted in your hearing record."

Mr. ROMM. Mr. Evins, we have not been telling them to write you at all.

Mr. EVINS. Who did this? The letters are uniform, not just individually written. They have quotes around them, "See that my statement is included in the hearing record." This is lobbying from the local level.

Mr. ROMM. Sir, I can assure you that it has not started in our place. I think what has happened is that they have become aware through the program restrictions in fiscal year 1968——

Mr. EVINS. Who wrote the letters?

Mr. ROMM. I can tell you this: It did not originate in the Office of Civil Defense. I do not know where it did originate. This letter that I provided you is not to his constituency, it is to a man who runs region 5.

Mr. EVINS. Thank you.

Mr. ROMM. It is a pretty good letter.

Mr. EVINS. We all read Governor Connally's letter. He is a great man.

Mr. ROMM. He is.

SURVIVAL SUPPLIES, EQUIPMENT AND TRAINING

Mr. EVINS. The next item is $2,400,000 for survival supplies, equipment and training.

Place pages 54 and 55 in the record.

(The pages follow:)

Survival supplies, equipment and training

Fiscal year 1967	$4,912,954
Fiscal year 1968	4,500,000
Fiscal year 1969	2,400,000

This project provides Federal funds to be matched with State and local funds for civil defense organizational supplies, equipment, and training services determined by the Office of Civil Defense to be necessary to a civil defense organization, as distinguished from personal equipment. It does not include those items which the local community normally utilizes in combating local disasters except when required in unusual quantities dictated by the requirements of the civil defense plans.

The Office of Civil Defense has also authorized the use of items acquired with Federal contributions for the following additional uses: (1) to combat or relieve the effects of disasters not resulting from enemy attack, and (2) the general use of communications equipment subject to the following restrictions: (*a*) that such use does not involve removal of the equipment from its place of use for civil defense purposes, and (*b*) that such use does not jeopardize its immediate availability in operating condition for civil defense purposes.

Items acquired with Federal contributions are maintained in usable condition and if consumed, lost, damaged, or destroyed, are replaced promptly by the State or political subdivision. Civil defense equipment is protected and maintained by the State or political subdivision in such a way as to assure its ready availability for the civil defense purpose for which it was acquired.

In order for a State or a political subdivision to be eligible for Federal contributions, the State civil defense agency must have either a full-time director or a full-time deputy director and the State must have an Office of Civil Defense-approved civil defense program. Further, the political subdivision must have a civil defense agency which has been established pursuant to law and is responsible for the development of the activities and measures which go to make up civil defense as defined in the Federal Civil Defense Act of 1950, as amended. In addition, the political subdivision must have a State approved civil defense program consistent with the State program.

This segment of the matching funds program is directly related to the growth pattern of local poltical subdivisions participating in the Federal shelter-oriented program. Further, within a political subdivision the growth of civil defense activity impacts on its requirements. Since fiscal year 1962, funds obligated under this program have been, and will continue to be, confined to the direct support of the civil defense shelter-oriented program.

During fiscal year 1969, obligations will be primarily limited to communications and warning recurring/maintenance charges and communications planning activities. Support of day-to-day civil defense operations (financed under the personnel and administrative expenses program) will be maintained at the previous year's level.

[In thousands of dollars]

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Communications	$2,673	$2,500	$1,113
Warning	1,620	1,500	1,087
Education services	246	200	0
General administrative equipment	212	200	200
Public safety devices and miscellaneous equipment	162	100	0
Total	4,913	4,500	2,400

Following are examples of supplies, equipment, and services provided for:

Communications: Equipment for a base station, maintenance of equipment, leased lines, and other recurring charges.

Warning: Sirens, loudspeakers, maintenance of warning devices, and recurring changes.

Education services: Training courses, test exercises, training slides, projectors, and film.

General administrative equipment: Desks, typewriters, other office equipment.

Public safety devices and miscellaneous equipment: Rescue equipment such as ladders, hatchets, rope and jacks, blankets, cots, refrigerators for medical supplies, small tools, chairs, tables, feeding equipment.

Mr. EVINS. I think you need to continue to have equipment and supplies.

Mr. ROMM. This is mostly for matching funds for the communications and warning systems at the local level.

Mr. EVINS. I thought we covered that under emergency operations?

Mr. ROMM. That was our development costs.

Mr. EVINS. Is there any duplication here?

Mr. ROMM. No, sir. As a matter of fact, I think that there is probably not enough money to cover all demands.

OCD MANAGEMENT

Mr. EVINS. Take a look at management—personnel services. In 1968 it was $10,840,000. Next year you are asking for $11,018,000.

Mr. JONAS. Keeps going up.

Mr. ROMM. This is essentially due to the increased pay rate which was effective October 1967. There are no increases in personnel called for.

Mr. EVINS. The Federal management process involves the use of 28 separate elements of the Department of Defense and 31 other agencies of the Government. Can you consolidate that?

Mr. ROMM. We are really using the skills available to us without duplicating them. For example, the engineering capability in the Corps of Engineers. We use the Adjutant General's Office to distribute our publications. The Army Pictorial Service prints our films and distributes them. We have not duplicated what is available. That is why we have a tremendous coordination job with all these people.

Mr. EVINS. You are using the good offices of all the other people?

Mr. ROMM. Yes, sir.

Mr. JONAS. Would you yield?

Mr. EVINS. Yes.

SUPERGRADES

Mr. JONAS. How many supergrades do you have? You must have a lot of them to get your average GS salary at $12,500. That is about the highest agency figure I have seen.

Mr. ROMM. There are higher. Our average grade has been reduced from GS–10.6 in 1964 to GS–10.29 in fiscal year 1969. My supergrade total is 28. That was also reduced from 33 in fiscal year 1964.

Mr. JONAS. In Washington?

Mr. ROMM. No, sir. That includes the regional directors and this is out of a total of 831 positions.

Mr. JONAS. Bodies?

Mr. ROMM. Yes, sir.

Mr. JONAS. Did you eliminate any under the legislation enacted last September; 2 percent for 1968?

Mr. ROMM. The action of this committee and the instructions in the——

Mr. JONAS. Made it unnecessary?

Mr. ROMM (continuing). Made it unnecessary for me to do that. I was way below the 10 percent obligation cut.

Mr. JONAS. It did not affect you, then?

Mr. ROMM. Yes, sir.

Mr. EVINS. The 1969 budget proposes the continuation of the fiscal year 1968 staffing level of 831 permanent civilian personnel?

Mr. ROMM. Yes, sir.

Mr. TALCOTT. With regard to Governor Connally's letter, what actually occurred during Hurricane Beulah?

Mr. ROMM. During Hurricane Beulah, Governor Connally's operation of the emergency operating center was a textbook example.

Mr. TALCOTT. What was the date of Beulah?

Mr. ROMM. That was last fall, September.

Mr. TALCOTT. The letter is dated March 1. It appears more appropriate to our hearing today than to Hurricane Beulah last fall.

Mr. ROMM. I don't think it was sent to Bill Parker in terms of that. I think it was sent because some of the requests for emergency operating centers had been turned down. There is not enough money to meet the demand.

Mr. EVINS. All Governors are calling on Uncle Sam for grants and appropriations. We took care of the Governor in the Office of Emergency Planning. He had to have a supplemental appropriation. This was in the Office of Emergency Planning.

How much did he get from the Office of Civil Defense?

Mr. ROMM. Nothing, except our assistance during the emergency.

Mr. EVINS. You have a lot of management, gentlemen, more than $12.5 million with more than 28 separate elements of the Department of Defense.

Mr. ROMM. Mr. Evins, I would like to point out in the reductions from 1968 to 1969, that there is a $25 million reduction in the total obligational program; $21 million of that reduction is related to the services of other agencies.

TRAVEL

Mr. EVINS. You are asking for $500,000 for travel. That is about the same level as the last 2 years.

Mr. ROMM. $25,000 less than last year.

Mr. EVINS. It went up from 1967 to 1968?

Mr. ROMM. Yes, sir.

ADMINISTRATIVE AND HOUSEKEEPING EXPENSES

Mr. EVINS. Administrative and housekeeping expenses, $1,226,000. This is shown on page 58.

Vehicle rental, $71,900; transportation of things, $9,000; movement of household goods, $8,000; rent, communications, utilities, $273,400; and printing and reproduction, another $40,000. You had your printing costs involved throughout the education program?

Mr. ROMM. Yes, sir.

Mr. EVINS. Other services, $47,800.

These are repair and maintenance. We gave you funds throughout the budget for repair of your exhibits.

Mr. ROMM. This is office equipment. Truly housekeeping.

Mr. EVINS. You have $18,300 for other contractual services?

Mr. ROMM. Yes, sir.

Mr. EVINS. Services of other agencies. Is this the total?

Mr. ROMM. This is what we are paying for administrative and housekeeping expenses.

Mr. EVINS. You told us a while ago you had 28 agencies in the Defense Department and so many others doing this service for you, and now you tell us you have to pay them?

Mr. ROMM. This is only the administrative and housekeeping function. It is primarily to pay GSA for maintaining our regional offices.

Mr. EVINS. This is paid to GSA?

MERIT SYSTEM REVIEW

Mr. ROMM. It also includes the merit system review. The Department of Health, Education, and Welfare administers the merit system review activity for themselves, for the Department of Labor, and for us.

Mr. EVINS. Merit system?

Mr. ROMM. This is the State and local merit system for qualification under P. & A. activity.

Mr. EVINS. Civil service does not do that?

Mr. ROMM. No, sir. Civil service does not have any jurisdiction over the State and local merit systems.

Mr. JONAS. How does HEW get into that?

Mr. ROMM. HEW provides administrative support in reviewing merit systems to be sure State and local governments qualify for matching funds, not just for us, but for themselves and the Department of Labor as well.

Mr. TALCOTT. They are actually performing a civil service function?

Mr. ROMM. Just partially. They pass on merit system qualifications. They do not establish jobs, per se.

Mr. EVINS. Does the $320,000 for the Federal communication in 1968 come in service for other agencies?

Mr. ROMM. Yes, indeed. Not here, though.

Mr. EVINS. Not in this item?

Mr. ROMM. This item includes only administrative and housekeeping expenses.

Mr. EVINS. Is FCC paid under another fund?

Mr. ROMM. They were paid under the emergency operations account. This is just for the housekeeping expenses.

FINANCE SERVICES

It includes finance services provided by the Department of the Army, Finance Office, and the Department——

Mr. EVINS. You pay them to do that?

Mr. ROMM. We pay them to prepare our payroll and to pay the vouchers.

Mr. EVINS. Can't the Pentagon provide any services for you?

Suppose we propose a bill not to have one agency charge another for services. It would eliminate a lot of paperwork and cost, reimbursements that run from one agency to another. It is all out of the same pocket.

Mr. ROMM. I can appreciate the logic in that.

Mr. EVINS. Can't you recommend that? You are in the Pentagon. Tell them to at least draw your checks for you.

Mr. ROMM. Mr. Evins, the financial management activity——

Mr. EVINS. That is a lot of bureaucracy.

Mr. ROMM. The people who get the service have to pay for it, and at times it is a good thing.

Mr. EVINS. The people who do the work ought to get the checks. We are for that. But the Pentagon ought to do something for you over there.

That is supposed to be an efficient department. They have the computers. They ought to do something efficient.

JURISDICTION OVER MERIT SYSTEM SERVICES

Mr. TALCOTT. Does HEW have jurisdiction over the merit system service? I do not understand where they get the jurisdiction. Is this part of the civil rights bill?

Mr. ROMM. No, sir. It is part of our legislation. For example, the legislation which authorizes the payment or matching of personnel and administrative expenses requires that the jurisdictions receiving these matching funds have merit systems. Similarly, HEW on their matching funds programs and assistance programs, and the Department of Labor in their assistance programs, require the same thing. Where the Federal Government has to administer three different reviews of the local merit system, we have agreed to let HEW do the administrative review for us. We provide some of the costs for doing that.

Mr. TALCOTT. HEW handles all the merit systems for all the agencies in the Federal Government?

Mr. ROMM. Yes, sir. It is a considerable savings for us. We do not have the know-how and, in effect, they are doing a job for us. We pay them $190,000 a year for this service.

Mr. TALCOTT. There is one agency of the Federal Government that is looking into all of the drugstores for all the other Federal agencies. That is under the same theory.

Mr. ROMM. It is a much more efficient operation. It avoids duplication.

EQUIPMENT

Mr. EVINS. Mr. Romm, you are asking for $93,100 for equipment. Last year it was $59,400. This is a substantial increase.

Mr. ROMM. Let me explain that. If you look at the bottom line there, this is for the ——

Mr. EVINS. The bottom line is $82,000; $44,000 last year and $14,000 the year before. It jumps by leaps and bounds.

Mr. ROMM. Let me explain what that is for. In fiscal year 1968, our regional center in region 1 will be completed. This amount is to provide the additional equipment that will be required. In fiscal year 1969, the regional operating centers in region 6 and region 8 will be completed. That money will go towards equipping them. That is a one-time expense. It occurs when the regional center is complete.

Mr. EVINS. It goes from $14,000 to $82,000 in the last 2 years.

Mr. ROMM. Yes, sir.

NEWSPAPERS AND PERIODICALS

Mr. JONAS. You already do much of the work as you read $1,600 worth of newspapers a year. What do you do, subscribe to every newspaper published in the United States?

Mr. ROMM. This is really covering the clipping service and newspaper information on our program at all of the regions, Staff College and Headquarters. It also includes technical periodicals for our professionals.

Mr. JONAS. Why do you need a clipping service?

Mr. ROMM. For example, I think it behooves us to keep up with what the public reaction is to our programs and what is occurring at the local level.

Mr. JONAS. Doesn't that dishearten you occasionally?

Mr. ROMM. No, sir. As a matter of fact, most of the news has been good.

Mr. TALCOTT. You send out the good news releases and pay for the clipping service, do you not?

Mr. ROMM. Not really. We have issued very few news releases on this program except in the home basement survey. There is a tremendous amount of newspaper coverage in that program.

Mr. JONAS. This is not all of it. Then you have $1,000 that you spend for syndicated newspaper service; AP and UP?

Mr. ROMM. That is the wire line service.

Mr. JONAS. What is that for?

Mr. EVINS. Since Mr. Romm has become Administrator it has gone down. He is not a Governor and is not running for office.

Mr. JONAS. It has not gone down from last year, $1,000. It looks like there is one place where we would cut you.

TELEPHONE ANSWERING SERVICE

Telephone answering service, $1,100.

Mr. ROMM. That is the——

Mr. JONAS. You do not mean that you all go out some day and there is nobody there to answer the phone? What if an emergency happened?

Mr. ROMM. This is for our regional offices. They do not maintain 24 hours coverage except during emergencies. This gets the call passed to the duty officer at home.

PHOTO AND ART WORK SERVICES

Mr. JONAS. That photo service, $2,400. You have a lot of lush items in here. That is a lot of photographs.

Art work, $600.

Mr. ROMM. That is a very small amount.

Mr. JONAS. That photo service, what is that?

Mr. ROMM. That is to take pictures, for example, in Beulah or other emergency activities. For example, the photos I showed you——

Mr. EVINS. Does the Air Force fly you out there while the hurricane is under way? You cannot get out there in an emergency.

Mr. ROMM. What we actually have is a service on the spot. Sometimes it is done by the Army Pictorial Service and sometimes locally.

Mr. EVINS. They send you the pictures and the bill?

Mr. ROMM. Yes, sir.

Mr. JONAS. If you got the Army Pictorial Service to do this, you would have to reimburse them?

Mr. ROMM. That is right.

Mr. JONAS. You usually hire a commercial one?

Mr. ROMM. No, sir. If we can get the Army Pictorial Service to do it, we use them because they are cheaper.

EMPLOYMENT TURNOVER

Mr. JONAS. I was looking with interest at this green sheet. What is your average turnover in employment a year, 20 percent?

Mr. ROMM. We have about 4 percent.

Mr. JONAS. That would be about thirty-some. You lose by attrition?

Mr. ROMM. Between 30 and 40.

Mr. JONAS. It looks like you would not have to fill any of those jobs. You want to keep the same number of permanent positions that you had last year and your budget is $8 million less. You only have 18 lower than you had 3 years ago and you are $24 million less in the budget. When your budget is cut, you ought to reduce personnel.

Mr. ROMM. There are a lot of activities going on in civil defense which are not related to the budget cuts at all. Since 1962, we have reduced from 1,200 people.

Mr. JONAS. Can't you reduce that?

Mr. ROMM. We are hard-pressed to do the jobs at hand right now with the people on hand.

Mr. JONAS. It looks like you could eliminate 31 at least with this reduced budget.

Mr. ROMM. There are a tremendous amount of activities which go on in our regional office and here which are not directly related to the amount of money being spent but do relate to the activity in the program. You will find that at the local level there has been a 10-percent increase in participation over the last 3 years. We have had a decrease in personnel and have absorbed this 10-percent increase in activity.

Further, our 831 ceiling has been gone through in a line-item-by-line-item review by the Defense Department and the Bureau of the Budget. They did not cut us and I can assure you they were looking for areas to reduce.

Research, Shelter Survey and Marking

PROGRAM AND FINANCING

[In thousands of dollars]

		Budget plan (amounts for civil defense actions programed)			Obligations		
		1967 actual	1968 estimate	1969 estimate	1967 actual	1968 estimate	1969 estimate
	Program by activities:						
	Direct:						
	1. Shelters	25,000	12,900	15,100	39,445	31,728	17,900
	2. Research and development	10,000	7,100	6,500	10,636	7,670	6,500
	Total direct	35,000	20,000	21,600	50,081	39,398	24,400
	Reimbursable:						
	1. Shelters		10	10	3	10	10
	2. Research and development		70	75	60	70	75
	Total reimbursable		80	85	63	80	85
10	Total	35,000	20,080	21,685	50,144	39,478	24,485
	Financing:						
	Receipts and reimbursements from:						
11	Federal funds		−70	−75	−30	−70	−75
14	Non-Federal sources [1]		−10	−10	−3	−10	−10
21	Unobligated balance available, start of year: For completion of prior year budget plans				−37,310	−22,198	−2,800
24	Unobligated balance available, end of year: For completion of prior year budget plans				22,198	2,800	
40	New obligational authority (appropriation)	35,000	20,000	21,600	35,000	20,000	21,600
	Relation of obligations to expenditures:						
10	Total obligations				50,144	39,478	24,485
70	Receipts and other offsets (items 11 to 17)				−33	−80	−85
71	Obligations affecting expenditures				50,111	39,398	24,400
72	Obligated balance, start of year				23,394	39,640	48,038
74	Obligated balance, end of year				−39,640	−48,038	−41,438
90	Expenditures				33,866	31,000	31,000
	Expenditures are distributed as follows:						
01	Out of current authorizations				33,866	8,000	8,000
02	Out of prior authorizations					23,000	23,000

[1] Reimbursement from non-Federal sources are derived from commerical carriers for property lost and/or damaged in transit (31 U.S.C. 489a).

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Direct obligations:			
24.0	Printing and reproduction	361		
25.1	Other services	11,119	8,054	8,015
25.2	Services of other agencies	38,110	31,344	16,385
31.0	Equipment	492		
	Total direct obligations	50,081	39,398	24,400
	Reimbursable obligations:			
25.2	Services of other agencies	60	70	75
26.0	Supplies and materials	3	10	10
	Total reimbursable obligations	63	80	85
99.0	Total obligations	50,144	39,478	24,485

Mr. EVINS. "Research, shelter survey and marking." Place in the record pages 63 and 64.

(The pages follow:)

FISCAL YEAR 1969 BUDGET ESTIMATE—RESEARCH, SHELTER SURVEY AND MARKING

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Shelters	$25,000,000	$12,900,000	$15,100,000
Shelter survey and marking	20,122,287	8,313,000	8,700,000
Community shelter planning	2,099,011	2,631,500	3,300,000
Design development	2,583,843	1,005,500	3,100,000
Shelter stocking	194,859	950,000	0
Federal regional emergency operating centers	0	0	0
Research and development	10,000,000	7,100,000	6,500,000
Total appropriation	35,000,000	20,000,000	21,600,000
Unobligated balance for use in subsequent years	22,198,177	2,800,000	
Available prior year unobligated balance	37,279,645	22,198,177	2,800,000
Total obligations	50,081,468	39,398,177	24,400,000

RESEARCH, SHELTER SURVEY AND MARKING DISTRIBUTION BY OBJECT CLASSIFICATION (DIRECT OBLIGATIONS)

		Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
24.0	Printing and reproduction	$360,779	0	0
25.1	Other services	11,118,914	$8,054,550	$8,015,000
25.2	Services of other agencies	38,110,136	31,343,627	16,385,000
31.0	Equipment	491,639	0	0
	Total, direct obligations	50,081,468	39,398,177	24,400,000

UNOBLIGATED BALANCE

Mr. EVINS. I think that you have a carryover in this fund, have you not?

Mr. ROMM. Yes, sir.

Mr. EVINS. $2,800,000?

Mr. ROMM. Yes, sir. All of that is related to the warehousing and distribution of shelter supplies currently in storage. There will be no carryover from 1968 into either the research or into the survey program. All of that $2.8 million carryover is to maintain the stocks in Federal storage sites and to issue them to requisitioning local governments. The rest of the amount is an increase in new obligational authority but, as I say, since there is no carryover, it represents a substantial reduction in the obligation program.

Mr EVINS. Shelter survey and marking goes up from $8,313,000 to $8,700,000. Community shelter planning goes up from $2,631,500 to $3.3 million. Design development goes from $1 million to $3.1 million.

Mr. ROMM. You will find that in 1968 we are using the carryover that we went into the year with. So our total program, despite this increase in new obligational authority, is substantially reduced. For example, in obligations, the shelter survey and marking program goes from $15.4 to $8.7 million. The design development goes down from 3.5 to 3.1.

Mr. EVINS. This is on page 67?

Mr. ROMM. That is on the top of the page. Total obligations drop by almost 50 percent.

Mr. EVINS. $12.9 million to $15.1 million is the increase?

Mr. ROMM. Yes, sir.

Mr. EVINS. You are requesting $8.7 million for shelter survey and marking?

Mr. ROMM. That is right.

Mr. EVINS. As against $8,313,000?

Mr. ROMM. In fiscal year 1968. We entered fiscal year 1968 with a $7 million carryover in this account. The total obligational program for 1968 is $15,400,000.

Mr. EVINS. $7,089,755 is your available amount from unobligated balances carried over?

Mr. ROMM. Yes, sir.

Mr. JONAS. How did you happen to have that unobligated money? Were you subject to a freeze?

Mr. ROMM. No, sir. This is from funds appropriated in prior years. There was literally a lag in getting the work placed.

AMOUNT USED FOR SURVEY AND MARKING

Mr. EVINS. How much has been obligated to date in shelter surveys?

Mr. ROMM. There has been $120 million obligated through fiscal year 1967 for survey and marking.

Mr. EVINS. $120 million in marking?

Mr. ROMM. Yes, sir. Survey and marking.

SURVEY AND MARKING VS. RESEARCH

Mr. EVINS. What is the difference in survey and marking and research?

Mr. ROMM. The research program is an investigation into the advances that can be made in civil defense activities. The survey and marking is not research. It is an application of practical methods.

Mr. EVINS. You had a $7 million unobligated carryover in survey and marking?

Mr. ROMM. Yes, sir, into fiscal year 1968.

SIGN POSTING AND MAINTENANCE

Mr. EVINS. Some of these markings are getting rusty and you have to paint them?

Mr. ROMM. We have a sign maintenance program. You will find that is covered in the cost of marking on page 69.

Mr. EVINS. Home fallout surveys, $700,000. Marking, $700,000. I imagine that is to repaint and bring them up to date?

Mr. ROMM. Yes.

It is about evenly split between marking new structures and maintaining the old signs.

Mr. EVINS. Do you put up new signs or touch up the ones that you have?

Mr. ROMM. No, sir. We replace the signs.

SHELTER SURVEY AND MARKING JUSTIFICATION

Mr. EVINS. Place in the record pages 67 through 70.
(The pages follow:)

SHELTER SURVEY AND MARKING

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
New obligational authority	$20,122,287	$8,313,000	$8,700,000
Unobligated balance for use in subsequent years	7,089,755	0	0
Available prior year unobligated balance	12,994,778	7,089,755	0
Total obligations	26,027,310	15,402,755	8,700,000

There is some protection from radioactive fallout in all structures, because they reduce by varying degress the amount of radiation to which a person would be exposed. This reduction of radiation intensity results from the amount of structural mass and the distance between the source of radiation outside the building and the person within. The purpose of a fallout shelter program is to provide enough shielding to reduce radiation doses to nonfatal or nondisabling levels.

The Office of Civil Defense has initiated two types of surveys to locate fallout protection in existing structures. These surveys are highly automated and are administered for OCD by the military engineers or the U.S. Bureau of the Census.

1. *National fallout shelter survey, $7,300,000*

A national fallout shelter survey (NFSS) was started in late 1961 to locate potential public fallout shelter space in large structures—space meeting Department of Defense shelter standards and which would accommodate 50 or more persons in the event of attack. By December 25, 1967, this survey located potential public fallout shelter space for more than 165 million people in over 181,000 structures throughout the Nation. An important part of the survey is the obtaining of signed license or privilege agreements from building owners to permit the use for public purposes in time of emergency of acceptable shelter space located in their facilities. As of December 25, 1967, over 105,000 buildings had been licensed. Owners of over 104,00 buildings, containing space for over 96 million people, had voluntarily authorized marking (with the black and yellow public fallout shelter sign) for emergency use of the buildings as public fallout shelters in the event of attack. More than 86,000 buildings with shelter space for over 82 million people had been stocked with austere supplies (including food, medical and sanitation supplies, and radiological instruments) provided by the Federal Government. These are in addition to the water, food, and other resources that are normally in a building designated as a public fallout shelter.

The survey was expanded in fiscal year 1966 to identify fallout protection in smaller buildings, other than private homes, that might accommodate 10 to 49 persons in areas of unfilled shelter requirements where a community shelter plan is scheduled. As of December 25, 1967, this segment of the NFSS, which is being conducted in phase with the community shelter planning program has located PF 40 or better space for about 2.3 million people.

The survey was further expanded in late fiscal year 1967, to locate fallout protection in structures which were excluded in the basic national fallout shelter survey because they did not meet minimum protection criteria, PF 40, but which do offer substantially better protection than homes without basements. The search for the best available protection is limited to the southern and southwestern states where few homes have basements.

2. *Home fallout protection survey, $700,000*

Surveys started during fiscal year 1968 and carried to private householders under the home fallout protection survey (HFPS) will be completed by the end of the second quarter of fiscal year 1969. Analysis of results, publication and distribution of reports and other end-of-survey activities will continue during the rest of fiscal year 1969. These surveys are aimed at the over 25 million U.S. homes with basements. Unlike the surveys of large buildings, where about

two-thirds of the fallout shelter space is located in aboveground areas, studies show that in small buildings, such as private homes, fallout protected areas can be located only in belowground basement areas.

After active development and testing which was begun in 1962, HFPS was first deployed in Rhode Island early in 1966. The home survey, conducted in a State only upon the request of the Governor, involves the use of a special questionnaire, and computerized processing of it by the U.S. Bureau of the Census, to determine and report to residents of one-, two-, and three-family dwellings the amount of fallout protection in their home basement, and how to improve it. The information is confidential to the householder, but State and local governments receive statistical summaries to assist them in fallout shelter planning efforts.

Surveys have been completed in 16 States and 12 more are in process or planned for initiation in fiscal year 1968. The surveys completed and those in process as of January 10, 1968, identified shelter space of PF 20 or better for 18.1 million occupants of 5.2 million homes. The average response to questionnaires mailed out to homeowners in the 16 completed States was 78 percent. This home survey has also been used by the military services to determine fallout protection available in the houses of military and civilian personnel, on and off military installations.

3. *Marking, $700,000*

Public fallout shelter facilities which are included in local civil defense plans for use as shelters are marked, upon permission obtained from owners, with distinctive black and yellow signs. The signs are placed at or near exterior entrances and on interior wall surfaces so as to guide persons to shelter areas within the facility. Maintenance of signs is usually accomplished during revisits to specific areas scheduled for updating or expanded survey work.

Responsibility for marking of shelter facilities is shared by the Federal and local governments. Upon request by the local civil defense office, through the State civil defense office, Corps of Engineers, and Naval Facilities Engineering Command (NavFac), field offices accomplish sign posting. CE–NavFac field offices also furnish technical assistance to local CD offices that post signs themselves.

As of December 25, 1967, over 104,000 structures with over 96 million fallout shelter spaces had been marked. An estimated 6,000 structures were provided with sign maintenance during fiscal year 1967, and it is anticipated that an additional 14,700 facilities will have sign maintenance performed during fiscal years 1968 and 1969. This essentially will provide for the maintenance of those signs posted during fiscal years 1962 and 1963.

	Actual, fiscal year 1962–66	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
Facilities marked	95,419	5,599	8,800	7,700
Shelter spaces marked	85,286,000	7,378,000	7,920,000	6,930,000
Maintenance (facilities)	0	[1] 6,000	7,100	7,600

[1] Estimated.

SHELTER SURVEY WORKLOAD

	Actual, fiscal year 1962-66	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
National fallout shelter survey: Facilities surveyed	[1] 254,701	[1] 15,834	41,000	20,500
PF 40 or better: Shelter spaces located (net)	151,787,363	10,731,397	6,700,000	5,000,000
PF 20 to PF 39: Spaces located		23,121	500,000	250,000
PF 10 to PF 19: Spaces located		69,185	720,000	360,000
Home fallout protection survey:				
States surveyed (starts)	1	9	18	0
Total number of homes to be surveyed	222,688	4,455,823	10,914,000	700,000
Homes with shelters	147,909	2,412,332	5,240,000	700,000
PF 40 or better: Shelter spaces for residents	65,643	271,398	894,000	196,000
PF 20 to PF 39: Shelter spaces for residents	471,709	7,885,290	17,415,000	2,254,000
Total spaces located:				
PF 40 or better	151,853,006	11,002,795	7,594,000	5,196,000
PF 20 to PF 39	471,709	7,908,411	17,915,000	2,504,000
PF 10 to PF 19 [2]		69,185	720,000	360,000
Expanded surveys (food, water, ventilation kits):				
Modified and new structures	11,440	14,115	20,400	14,975
Revisits	16,000	27,720	0	0
Licensing:				
Facilities licensed	93,032	7,436	8,000	8,000
Shelter spaces licensed	89,268,000	9,429,000	7,200,000	7,200,000

[1] Net increase in facilities. Excludes those resurveyed for updating.
[2] National fallout shelter survey only.

Mr. ROMM. I would like to offer a correction for page 70, if I may. You will find on the second line under fiscal year 1968 we estimated at the time this book was published that we would locate 6.7 million spaces. This will be closer to 10 million spaces located.

Mr. EVINS. Is GSA going to give you some more buildings?

Mr. ROMM. GSA designers work on that very well. You will recall some years ago this committee authorized shelter for 16 buildings. These 16 are nearly complete and eight buildings actually got increased shelter without any increase in costs.

COMMUNITY SHELTER PLANNING

Mr. EVINS. Community shelter planning, page 72.

You are asking for $3,300,000, an increase over last year. You had a $500,000 carryover.

Mr. ROMM. Yes, sir.

Mr. EVINS. Place in the record pages 72 through 74.

(The pages follow:)

COMMUNITY SHELTER PLANNING

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
New obligational authority	$2,099,011	$2,631,500	$3,300,000
Unobligated balance for use in subsequent years	500,000	0	0
Available prior year unobligated balance	3,591,713	500,000	0
Total obligations	5,190,724	3,131,500	3,300,000

The national fallout shelter survey (NFSS) has identified nearly 165 million public fallout shelter spaces in existing buildings, of which over 96 million were marked by December 25, 1967. If an attack occurred in the near future, these spaces would save many lives simply by being marked. This is because people who were in buildings affording shelter, or who were nearby and knew that the shelter signs identified protected areas, would know where to go. However, it is

clear that the public shelters now identified will not be fully effective until citizens in areas served by public shelters know where the shelters are and where they should go and what they should do to best use the shelters.

In addition, no area is totally without fallout protection, even though there may not be sufficient shelter identified by the national fallout shelter survey for all of the population in the area. Citizens in areas with a deficit of standard PF 40 shelter should know where the best available protected space is located, including protection identified in their homes by the home fallout protection survey, and they should know what to do, if it should be necessary, to improve the protection already existing.

Finally, even if the citizens know where to go and what to do to make the best use possible of existing protection from fallout, local governments—including mayors, policemen, firemen, local civil defense directors, and other local officials—should have a plan on what to do to assist their citizens.

Thus, an essential step in developing an operational civil defense system based on fallout shelters is to build upon the investment represented by the national fallout shelter survey and related shelter surveys, by providing specific information to allow each citizen to determine what to do and where to go in time of emergency and by getting that information to the individual. The largest part of the job involves matching people to the best protection available and making these allocations known. This includes detailed advice to people in areas not presently served by public shelters identified by shelter surveys as to what is the best existing protected space available and as to how to improve that protection, if necessary.

The planning process also defines areas of shelter deficit, in which low-cost opportunities to identify or develop more shelter should be exploited. The initial shelter allocation has to be updated periodically in communities throughout the country as more shelter space becomes available. This becomes one of the aspects of the total urban planning effort in the community.

An additional part of the job of community shelter planning involves identifying modifications required in existing local government emergency plans to base them on shelter allocation plans; in other words, to establish a working shelter system. This includes, for example, detailed local arrangements for the police force to help the people move to shelters, for the radiation monitoring system to be closely related to the shelters in each community, and for the provision of shelter managers in each public shelter.

The community shelter planning program is designed to assist localities throughout the United States to attain emergency readiness as outlined above. Localities do this by developing an allocation plan to make the best use possible of existing protection, by identifying local shelter deficits with precision, by developing concrete and practical local procedures to develop additional shelter in areas where it is needed, and by identifying updating required in their local government emergency plans. In this way, local readiness is based upon the use of the best existing protection from fallout and upon the use of the existing forces, know-how, and equipment of local government.

Community shelter plans are developed for local planning areas which may include only one county or which may be as large as a multicounty metropolitan area.

The specific techniques and processes used in this community shelter planning process have been thoroughly field tested. The field tests also showed that the skills of the urban planning professional were necessary for development of realistic shelters-use plans. Accordingly, the community shelter planning program provides for work by local urban planners on the initial shelter allocation process, while periodically updating these allocations becomes one of the aspects of the total urban planning effort in the community. Professional community-planning competence is available, according to a survey conducted by the International City Managers Association, within local governments in 98 percent of cities over 100,000, in 80 percent of cities over 50,000 and 31 percent of cities over 10,000. Private firms specializing in community planning are also available to do work on a consulting basis.

The work involved in allocating local populations to existing shelters is fully federally supported, relying to the maximum on local urban planning professionals. In the approximately 600 more heavily populated metropolitan areas, the work has been and will be accomplished by means of a contract between field offices of the Army Corps of Engineers or Navy Facilities Engineering Command, acting on behalf of the Office of Civil Defense, and the locality. Contracts are

negotiated with a local government or with a regional or metropolitan area urban-planning commission. As of December 30, 1967, 184 contracts had been placed throughout the country for the development of area community shelter plans. In the balance of the country, urban planner assistance is supplied under a contract between the State and the Office of Civil Defense, providing for professional urban planning service to be made available from the State level. As of December 30, 1967, 235 community shelter plans were initiated as a result of such planning service. The program is discussed personally with Governors, mayors, and county officials in the earliest phase of activity. Acceptance and approval by these officials is a prerequisite to contract negotiation.

In all cases, the community shelter planning process results in advice for citizens in the local planning area as to where to go and what to do to maximize chances of survival in case of nuclear attack. This advice is normally provided in the form of maps and instructions, and may be published in newspapers or telephone directories or mailed or distributed to each household. (Fund support for the publication phase of the community shelter program is included under the operation and maintenance appropriation, "Emergency information.")

During fiscal year 1968, it is estimated that 32 areas will be contracted for making a cumulative total of 189 areas. The fiscal year 1968 contracts average $60,000 each due to the inclusion of several major metropolitan areas. To date, the average cost per person for the entire program is approximately $0.13; however, in metropolitan areas with a population of over 1 million, the average cost is approximately $0.07. The average cost in all other areas is approximately $0.14 per person. For fiscal year 1969, estimated contract costs are based on the cumulative experience to date of $43,000 average cost for 189 contract areas. Therefore, the fiscal year 1969 funds in the amount of $2,150,000 will extend the contracting for community shelter planning to an additional 50 local planning areas.

Funds in the amount of $1,150,000 are also being requested to provide for continued professional urban planning service from the State level, to localities not covered by direct contracts. It is anticipated that 360 area plans will be accomplished as a result of the State level service during each of fiscal years 1968 and 1969.

RESEARCH AND DEVELOPMENT

Mr. EVINS. Then you have some more research and development on page 84, where you are asking for $6.5 million. You have been developing for 18 years and you need $6.5 million more?

Mr. ROMM. You will notice there is a tremendous reduction since 1967. There is a 37-percent reduction since 1967. We have deferred some very important things during 1969. We are continuing some very important projects.

DESIGN DEVELOPMENT

Mr. EVINS. Page 78. Give us more detail on the elements of costs in the item for $2,400,000, "Professional advisory services."

Mr. ROMM. This is were we provide advice on improving the designs of new construction in both non-Federal and Federal buildings for the inclusion of shelter. The non-Federal buildings include emergency operating centers at the local level. This has helped in getting the cost down from $100,000 in matching funds per center to about $25,000 per center. There is included $1 million for Corps of Engineers assistance.

The Corps of Engineers has influenced military construction, the Department of Agriculture has also been providing an engineering advisory service in agricultural construction. We have university advisory services from engineering and architectural schools which are also available to the engineer and architect professions.

Mr. EVINS. They want to get the contracts so they will draw them like you suggest.

Mr. ROMM. You will find there are few building owners that specify shelters.

Mr. EVINS. Do you think you are subsidizing the architectural profession a little bit too much?

Mr. ROMM. Mr. Evins, you will find there are very few owners that specify a requirement for fallout protection in the new construction. It is true that the architectural and engineering advisory services that is provided has been able to get increased shelters into new construction.

As you know, the new construction materials are fairly lightweight and it takes a great deal of skill, design and improvement to get the kind of fallout protection we need.

Mr. EVINS. You state that:

From fiscal year 1965 to December 1967, detailed analyses of 62 proposed new GSA Federal buildings had been made, and recommendations on slanting techniques to provide shelter were furnished which would result in an estimated 340,000 shelter spaces.

Continuation of a four-step program to make inclusion of standard shelter protection in the home practical by, one, designing new methods of incorporating shelter in homes; two, refining and developing these designs to assure low-cost marketability; three, testing final designs; and four, making these designs available.

Mr. ROMM. That is in homes.

Mr. EVINS. GSA and homes?

Mr. ROMM. Yes.

Mr. EVINS. Continuation on a limited basis, of the university architectural and engineering development centers program, $200,000.

Mr. ROMM. This is a reduction from the previous amount.

Mr. EVINS. Continuation of the direct mail system activated by information from Dodge Reports and other commerce sources on probable shelter yield of new building, $400,000.

Mr. ROMM. This direct mail system really solicits the owner and architect at the time the decision is made to build something before the designs are finalized. We tested this system out in seven States and it worked.

DESIGN DEVELOPMENT JUSTIFICATION

Mr. EVINS. We will put 77 through 80 in the record.

(The pages follow:)

DESIGN DEVELOPMENT

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
New obligational authority	$2,583,843	$1,005,500	$3,100,000
Unobligated balance for use in subsequent years	2,536,050	0	0
Available prior year unobligated balance	3,896,369	2,536,050	0
Total obligations	3,944,162	3,541,550	3,100,000

Under the architect and engineer development program (see page 27), qualified architects and engineers are being trained to consider and apply low-cost and no-cost slanting techniques in the design phases of building construction. Notwithstanding the fact that there are currently over 13,000 architects and engineers certified in radiation shielding technology, there are many buildings

still being constructed without adequate consideration being given to shielding requirements by architects and engineers who have not as yet had the opportunity to receive appropriate training. If these weak points in design which nullified otherwise good protection could have been detected by someone knowledgeable in radiation shielding analysis during the initial design phase of the project, then design changes using slanting techniques could have been incorporated to maximize the protection. The design development program is designed to fill this void and take maximum advantage of current construction projects to incorporate slanting protective features into such on-going construction projects.

Design slanting for fallout protection is defined as the incorporation with little or no extra cost and no reduction in efficiency, of certain architectural and engineering features into new structures, to protect personnel from fallout gamma radiation in event of an emergency. The current trend in building design towards the use of lightweight materials and large amounts of glass in exterior walls requires a determined effort on the part of the designer to achieve fallout protection. Since its introduction in 1964, slanting techniques have been incorporated into various types of buildings: i.e., schools, industrial plants, shopping centers, office buildings, etc. Architects and engineers, as a result of their participation in the combined OCD program, have been instrumental in accomplishing this.

Funds requested in this budget estimate will provide for:

(*a*) Continuation of professional advisory service to be rendered for programs involving State and local emergency operating centers, rural civil defense, emergency broadcasting system protection, community shelter planning, and professional advice to architects of new building—both Federal and non-Federal, $2,400,000.

This program is administered by OCD through contractual arrangements with the Corps of Engineers, Department of Agriculture, architectural firms, 42 selected universities and colleges involving approximately 125 professors of architecture and engineering. Under these contractual arrangements (1) engineering guidance on emergency operating centers is furnished to State and local officials, (2) project applications including plans, specifications, and cost estimates are reviewed, (3) engineering studies pertaining to special problems are conducted, (4) services to agricultural engineers are provided to promote the inclusion of shelters in the design of community and farm buildings, (5) professional advisory services are provided to architects and engineers designing military, Federal, and non-Federal buildings, (6) technical assistance is provided to installation commanders to optimize design and utility of fallout shelters on military installations.

(*1*) *Non-Federal buildings*

Experience through June 30, 1967, indictes that requests for engineering and technical advisory service in non-Federal construction projects have resulted in an average yield of approximately 1,800 shelter spaces per facility at an average advisory service cost of $0.14 per shelter space. To further improve this response, a test program for a direct mail system of contacting owners and architects to encourage the incorporation of shelter spaces into design projects was conducted during fiscal year 1968. As an indication of the growing acceptance of fallout shelter design techniques and the effectiveness of the direct mail shelter development system during the first quarter of fiscal year 1968, responses from architects requesting technical assistance and advisory services have increased fourfold over responses received during a similar period in the previous fiscal year.

(*2*) *Federal buildings*

The program continues to provide guidance and professional consulting services to Federal agencies responsible for building designs so that fallout shelter protection can be maximized at little, if any, increase in cost and to promote the incorporation of shelter into structures that are constructed with funds that include a Federal subsidy. Guidance and professional advisory services are provided to Federal agencies in providing public fallout shelters in Federal buildings and for the incorporation of shelter for their emergency functions. Similar advisory services are also provided, on a reimbursable basis, on new military buildings by the Corps of Engineers.

From fiscal year 1965 to December 1967, detailed analyses of 62 proposed new GSA Federal buildings had been made, and recommendations on slanting techniques to provide shelter were furnished which would result in an estimated

340,000 shelter spaces. The shelter cost as a percent of the total construction cost averaged less than three-fourths of 1 percent. As an indication of the increased acceptance of these new design techniques by Federal agency construction personnel, a total of 109 proposed Federal buildings have been budgeted for through fiscal year 1968, which include fallout shelter at no additional construction cost. In addition, guidance and professional consulting services were provided to other Federal agencies in 16 additional Federal buildings to obtain over 56,000 fallout shelter spaces.

b. Continuation of a 4-step program to make inclusion of standard shelter protection in the home practical by (1) designing new methods of incorporating shelter in homes on a dual-use basis to expand usable home space and increase appraisal value; (2) refining and developing these designs to assure low-cost marketability to the public and thus, acceptability by the professional home-builder; (3) testing final design to assure compliance with OCD criteria without excess mass and to assure most practical placement of essential mass; and (4) making these designs available to service firms for inclusion in standard home plans, $100,000.

The majority of single family homes in the United States are constructed by using standard plans developed by service firms rather than by retaining architectural and engineering services for custom design. As evidenced by the home fallout protection survey, this shelter potential is not to be ignored. Slanting techniques can be utilized on home designs but they must be either no-cost or add to the value of the home by increasing its appraised value to retain its sales appeal on a highly competitive market.

During fiscal year 1968 a series of cost-effective methods of achieving PF–40 in new and existing homes were developed in cooperation with the National Association of Home Builders and their member industry trade associations. This included the assembly of a builder's reference manual setting forth the most economical methods of achieving fallout protection in homes without adversely affecting normal use of the protected space. In addition, a radiation test structure, typical of American homes, was constructed and tested for radiation shielding under a wide variety of structural configurations. The test program results are being documented for comparison with theoretical calculation in order to obtain an indication as to where the current shielding methodology for homes might be further improved.

c. Continuation of the direct mail system, activated by information from Dodge Reports and other commercial sources to make timely offers of technical assistance to interested owners, architects and consulting engineers; related analyses as to the probable shelter yield of new buildings; improving the reliability of construction reports and statistics in forecasting potential spaces to become available through shelter design application, $400,000.

d. Continuation on a limited basis, of the university architectural and engineering development centers program. This program is designed to integrate the entire technical capabilities of a university toward serving civil defense requirements and providing the professional with a concentrated abstract of the latest architectural-engineering technology. These data are expressed in simplified form, suitable for direct use by the practicing professional as rapidly as possible for the development of shelter, $200,000.

SHELTER STOCKING

Mr. EVINS. We will take a look at shelter stocking, $2.8 million. Is this for warehousing?

Mr. ROMM. All of it is for warehousing.

Mr. EVINS. We considered earlier funds for warehousing. Is this a different type?

Mr. ROMM. Yes, sir. The funds we considered before were for radiological defense equipment.

Mr. EVINS. Why do you not consolidate all warehousing costs into one item?

Mr. ROMM. Mr. Evins, the warehousing costs for the emergency water equipment and the radiological instruments are consolidated in the O. & M. appropriation. This money was appropriated at the

time the shelter supplies were purchased and is available for the continued storage and issuance. This is why it shows up in this account.

My comptroller tells me this is planned to be carried over. It is not by accident. We have to have it carried over to warehouse and issue the stocks we have in the depot.

Mr. EVINS. This is not warehousing on the site at the manufacturing plant?

Mr. ROMM. No, sir. It is in Government warehouses.

Actually, we have been cutting down by consolidating the number of warehouses. In fiscal year 1962, there were 94 and now there are 25.

Mr. EVINS. Who operates this system?

Mr. ROMM. Defense Supply Agency operates the system for us, mostly at the Defense General Supply Center in Richmond.

Mr. EVINS. You have a quality check program, a product improvement program, and a management of materials program. Do these materials you are warehousing ultimately go to fallout shelters?

Mr. ROMM. Yes, sir.

FEDERAL REGIONAL EMERGENCY OPERATING CENTERS

Mr. EVINS. It is more than you used 2 years ago.

We will put page 83 in the record. This pertains to the Federal regional emergency operating centers.

(The page follows:)

FEDERAL REGIONAL EMERGENCY OPERATING CENTERS

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
New obligational authority	0	0	0
Unobligated balance for use in subsequent years	$5,034,238	0	0
Available prior year unobligated balance	7,800,000	$6,034,238	0
Total obligations	1,765,762	6,034,238	0

Effective direction and control under emergency conditions require a nationwide network of Federal, State, and local operating centers capable of performing and coordinating essential governmental functions. These operating centers are designed to meet the emergency needs of the specific element of government located therein. In the event of an emergency, or during periods of increased tension, these operating centers become the focal points for communication to the States and for the interchange of emergency information necessary for an effective civil defense preattack and postattack operation.

Federal direction and control would originate from eight Federal regional emergency operating centers. Each has the capability of operating independently under emergency conditions to guide the immediate survival operations and the subsequent recovery effort in their respective geographical areas. The structures furnish protected operational headquarters for the daily use of the regional staffs to permit the regional staffs of both OCD and the Office of Emergency Planning and other Federal agency personnel to direct the execution of essential civil defense and recovery functions under emergency conditions. Each regional center is being designed to provide adequate protection from potential nuclear radiation and blast. The facility at region 2 includes provision for the protected housing of the OCD computer facility.

One Federal regional emergency operating center has been completed (region 5). Construction of the region 1, 6, and 7 centers is underway and construction commitments are expected to be made for regions 2 and 4 in the third or fourth quarter fiscal year 1968. Due to the actual bid prices of the aforementioned

centers, cost experience and engineering cost estimates, the remaining two centers (regions 3 and 7) have been temporarily deferred. Original estimates were made in 1964 under criteria then current. Pending further cost and design analysis, funds are not requested in fiscal year 1969.

Mr. EVINS. The Federal regional emergency operating centers, you are asking for no funds for 1969?

Mr. ROMM. That is right, sir.

Mr. EVINS. You had $6 million last year.

Mr. JONAS. How many do you have in operation?

Mr. ROMM. We have region 5, which was constructed with funds appropriated in 1960.

Mr. JONAS. That was in Texas?

Mr. ROMM. That is in Texas. Region 1 is being completed right now. They will be moving in some time this month.

Mr. JONAS. That is in Massachusetts?

Mr. ROMM. Halfway between Fort Devens and Boston.

Regions 6 and 8 are under construction now, and they are scheduled to be completed in fiscal year 1969.

Region 2 will be advertised for bids this year, as will region 4.

Since the appropriation of funds for construction of these centers, there has been a tremendous increase in construction costs and the amount of money appropriated will not cover all of the regions. Regions 3 and 7 are not covered by available funds but we are not asking for additional money in fiscal year 1969. The request is being deferred to fiscal year 1970.

RESEARCH AND DEVELOPMENT

Mr. EVINS. Research and development on page 84.

We will put in the record pages 84 through 86.

(The pages follow:)

RESEARCH AND DEVELOPMENT

	Actual, fiscal year 1967	Estimate, fiscal year 1968	Estimate, fiscal year 1969
New obligational authority	$10,000,000	$7,100,000	$6,500,000
Unobligated balance for use in subsequent years	569,941	0	-
Available prior year unobligated balance	1,206,011	569,941	-
Total obligations	10,636,070	7,669,941	6,500,000

The research program conducted by the Office of Civil Defense emphasizes systems analysis and the necessary supporting applied research. A part of the effort is directed toward solution of technical problems arising in the implementation of currently approved programs but most is aimed at evaluation of the cost, effectiveness and feasibility of alternative civil defense systems of the future and at developing the technological base for the most promising candidates. These future civil defense systems must be evaluated in relation to other defensive systems, such as deployment of ballistic missile defenses, and the anticipated trends in weapon and delivery system capabilities.

Reduction in the fiscal year 1968 level of effort by approximately 30 percent has resulted in deferral or stretchout of all but the most central research tasks. The funds requested for fiscal year 1969 will continue the emphasis on only the most critically needed work.

Three basic types of future civil defense are under study: (1) systems similar to the current civil defense posture that offer substantial improvement yet lie within the general framework of present national security policy, (2) systems designed to provide a high degree of protection to urban populations against

attacks directed against them, and (3) systems designed to alter the vulnerability of population and resources by actions taken during a period of deteriorating international relations.

Systems of the first type, as near neighbors of the currently approved civil defense program, are being given priority attention, especially in connection with the deployment of a thin Sentinel ballistic missile defense. Emphasis is being placed on the slanting of new construction to provide added protection against blast and fire effects as well as fallout. Experimental and analytical work of the past several years indicates that moderate blast and fire slanting can be done at a cost not greatly over that of fallout slanting. This work must be accelerated to provide a technical basis for early field testing. Closely associated with the foregoing is the use of better knowledge of the extent and character of blast damage and fire growth and spread to develop improved capabilities for emergency operations, such as firefighting, rescue, and treatment of injured survivors, under nuclear attack conditions. Research to date has resulted in an improved concept of operations as a basis for this development. Mass fire is being studied in a substantial program of large experimental burns to aid in this research. The effect of the Sentinel deployment on the scope and effectiveness of civil defense operations is also receiving increased emphasis.

The fact that civil defense systems of the first type leave urban populations relatively vulnerable to attack leads to the consideration of systems incorporating hard shelter. The degree to which such shelters, designed to provide protection against all immediate weapons effects at a 50–100 pounds per square inch level, can be incorporated in new construction on a dual-use basis is not well understood. Past damage limiting studies of an assumed systems of 100 pounds per square inch single-purpose shelters have shown that these systems under certain conditions are competitive on a cost-effectiveness basis with various deployments of ballistic missile defense systems and degrade more gracefully as the threat level is increased. Recent siting studies indicate that the feasibility of building blast shelters in urban areas is greater than heretofore believed. Knowledge of feasibility, cost, and performance is not adequate at the present time. Moreover, as the protection against weapon effects is increased, the cost of the protected volume also increases. This demands careful analysis of tradeoff costs and feasibility of allocating less space per occupant.

An alternative to protecting urban populations inplace is relocate them during crisis periods so as to be less vulnerable to direct attack. Strategic evacuation poses severe economic costs but smaller outward movements to nearby fallout shelter appear attractive if essential production and services can be maintained by organized commuting of workers. High survival probabilities appear achievable in many metropolitan areas using pre-prepared fallout protection. Evaluation of these possibilities is continuing.

A major area of study continues to be the question of postattack viability of the country following nuclear attack. As increased protection is postulated for the population, per capita surviving resources are reduced unless resources are also protected. This is a difficult area of study in which prior years' investments are beginning to yield results. In fiscal year 1967, estimates were made for the first time of the effectiveness of civil defense in improving the productivity of a postattack economy and the welfare of survivors. A goal of the next few years is to improve the ability to measure the effectiveness of civil defense and other strategic defense systems not only in terms of added survivors but also in terms of per capita GNP or income at 1 or 2 years after attack. This work is being done in conjunction with the Office of Emergency Planning. In addition, a substantial effort is being applied to the study of the sensitivity of crops and food animals to radiations.

Analysis will be made of the use of Sentinel radar tracking information in improving civil defense warning and communications capabilities and the impact of such potential improvements on shelter management and emergency operations. Preliminary studies suggest that, given a disciplined organization, proper training, and effective information, substantial increases in lifesaving can be expected from civil defense use of impact warning. Work will be resumed on new and improved specifications for shelter stocks as well as experiments to determine how to incorporate low cost ventilation and air distribution into new buildings and other shelters. Studies of postattack viability will be extended to more fully account for organizational flexibility and substitutibility of resources and processes. Network analysis techniques will be employed to estimate the vulnerability of electric, water, and gas utilities to nuclear attack. Finally, the implications

of large Nike–X deployments for alternative civil defense measures and resource protection will be more thoroughly analyzed.

Mr. EVINS. Tell us why you need $6.5 million for further research.

Mr. ROMM. This is to improve the current system and to research into future systems. I would like to describe some of the major important projects we are engaged in now.

We are involved in shelter studies on improvements in fallout shelter designs and techniques, and investigations into the possibility of blast design at low cost.

Mr. EVINS. Is this the only research you have in your budget?

Mr. ROMM. Yes, sir. This is the only place where the research is being done.

Mr. EVINS. Is the research done under contract?

Mr. ROMM. It is all under contract.

The way it is distributed, we have Government contracts for about 23 percent of the funding.

Mr. EVINS. With Government agencies?

Mr. ROMM. Yes, about 23 percent. And 11 percent with educational institutions, universities. The rest——

Mr. EVINS. Are they writing reports or what are they doing?

Mr. ROMM. The university research is mostly in the theoretical field; that is, for example, improvement in developing models from the experimental testing data that comes out of the research in other areas.

Mr. EVINS. What are the other Government agencies doing? They are too busy to do research for civil defense. You are supposed to do your own.

Mr. ROMM. In a good deal of it, we are riding piggyback on the research they do. We are not doing all of the research, obviously. But we have research contracts, for example, with the engineers on blast design development which they do on their own account, and we have an add-on of materials which would be of benefit to civil defense.

Mr. EVINS. Besides the Government agencies and universities, what others are there?

Mr. ROMM. Two-thirds of it is in private organizations, both nonprofit and profit organizations. These are applied to what we consider at this point in time the most critical high-priority information to be developed for future civil defense capability.

Mr. EVINS. Mr. Romm, in my experience sitting here on the committee for several years, I have heard of our appropriating funds for testing the blast capability of fallout shelters, and we found answers.

Mr. ROMM. We are still developing experimental data. Actually, they have been doing blast design studies on scale models.

Mr. EVINS. Of course the contractor wants his contracts to continue all the time, he never wants to quit.

Mr. ROMM. You will find we deferred what we consider deferrable items. There has been about a 35 percent drop in this program over the last 2 years. What we have here we feel are high priority investigations to make sure we can have progress in the civil defense program in the future.

SUMMARY OF BUDGET

Mr. EVINS. Mr. Romm, you are asking for a $1.6 million increase in research and shelters, with a $2.8 million carryover, and you are asking for a $500,000 transfer in your other appropriations for civil defense.

Mr. ROMM. Yes, sir.

Mr. EVINS. For a total budget for 1969 of $77.3 million?

Mr. ROMM. Yes.

APPLICATION OF REDUCTION FROM 1968 TO 1969

Mr. MARSH. Generally speaking, where did you apply your 10-percent reduction you are down this year?

Mr. ROMM. The 10 percent in 1969 new appropriations?

Mr. MARSH. Yes.

Mr. ROMM. If you look at our obligational program, there was a 10-percent reduction in operations and maintenance. Most of that applied to the public education function.

Mr. MARSH. I mean generally in total appropriations.

Mr. ROMM. The area that was reduced the greatest was the shelter survey program. We are going to be able to survey only about half of the new buildings constructed in fiscal year 1969, and the other half will have to be caught up with in fiscal year 1970. We will also have no new starts for home basement surveys in 1969.

LEVEL OF FUNDING FOR EXPANDED PROGRAM

Mr. MARSH. I notice the Secretary of the Army, in a statement on page 3, said specifically this expanded national defense system would make a major contribution to the protection of the population against a heavy attack.

Would you want to make as an outside estimate as to the level of funding that would be consistent with that statement of the Secretary of the Army for your agency?

Mr. ROMM. I would say the level of funding, to be consistent with meeting the expanded program, would range from $150 million per year to about $250 million per year phased out over a 6- or 7-year period.

CIVIL DEFENSE IN SOVIET UNION

Mr. MARSH. The Soviet Union has developed a rather extensive shelter program; is that correct?

Mr. ROMM. No, sir. In the past they have done this: They developed in the Soviet Union a series of blast shelters for the Government organization. They have given instructions to the public on how to use the available fallout protection in large structures, very much like what we are doing, and they developed a series of training programs where they plan, unlike us, to have some kind of an evacuation to places outside the cities with the people themselves constructing some kind of makeshift fallout protection.

I do not know how practical this is. I do not think it would work here.

Mr. MARSH. Recent press accounts indicate they have deployed a rather extensive anti-ballistic-missile system. Does that agree with your observations?

Mr. ROMM. Not my observations, but I read the same press accounts, and they seem to have deployed an antiballistic system around Moscow.

Mr. MARSH. And I think you would say the Sino-Soviet effort is one of the principal contributors to international tension; is that not correct?

Mr. ROMM. I would not disagree with that.

Mr. MARSH. For the reduction of the tensions we mentioned earlier, the easy way would be for the Soviets to dismantle their anti-ballistic-missile system.

Mr. ROMM. I would much prefer they dismantle their strategic offense forces.

ADEQUACY OF FUNDING LEVEL FOR 1969

Mr. MARSH. Yes; and the anti-ballistic-missile system.

Do you feel the level of funding in your appropriation request this year is compatible with the threat we face from the standpoint of the nuclear attack?

Mr. ROMM. I feel the level of funding this year will help us maintain what we have gained to date. I think we will have to pick up these deferred items in future years to increase our capability to protect the population.

Mr. MARSH. Then I would assume you would recommend funding probably at a level in excess of the amount you have requested this year.

Mr. ROMM. I am here to support the President's budget. I wish I could get everything we have asked for in this year's budget.

Mr. MARSH. Thank you, Mr. Chairman.

Mr. EVINS. Mr. Director, I think you have done a very fine job. You know your subject. We commend you for your fine work and for your fine staff. I think you are an able administrator.

Mr. ROMM. Mr. Evins, I appreciate the kind words.

THURSDAY, MARCH 7, 1968.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

EMERGENCY HEALTH ACTIVITIES

WITNESSES

DR. HENRY C. HUNTLEY, DIRECTOR, DIVISION OF HEALTH MOBILIZATION
ROBERT J. WALLACE, FINANCIAL MANAGER
DR. CARRUTH J. WAGNER, DIRECTOR, BUREAU OF HEALTH SERVICES
RALPH BAHN, FINANCIAL MANAGER, BUREAU OF HEALTH SERVICES
DR. EUGENE H. GUTHRIE, ASSOCIATE SURGEON GENERAL
BERT J. SKINNARD, DIVISION OF FINANCE, OSG
ROBERT C. HARRIS, DIVISION OF BUDGET, OS

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Medical stockpile:			
	(a) Acquisition of stocks	405	2,500	2,780
	(b) Inventory management	3,269	3,778	3,675
	(c) Stockpile management	453	599	632
	2. Emergency health training and community preparedness	2,240	2,559	2,663
	Total program costs, funded [1]	6,367	9,436	9,750
	Change in selected resources [2]	−59	564	224
10	Total obligations	6,308	10,000	9,974
	Financing:			
21	Unobligated balance available, start of year	−4,935	−8,627	−7,574
24	Unobligated balance available, end of year	8,627	7,574	
	New obligational authority	10,000	8,947	2,400
	New obligational authority:			
40	Appropriation	10,000	9,000	2,400
41	Transferred to other accounts		−53	
43	Appropriation (adjusted)	10,000	8,947	2,400
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	6,308	10,000	9,974
72	Obligated balance, start of year	2,301	2,263	4,263
74	Obligated balance, end of year	−2,263	−4,263	−9,237
77	Adjustments in expired accounts	70		
90	Expenditures	6,416	8,000	5,000
	Expenditures are distributed as follows:			
01	Out of current authorizations	5,116	6,759	
02	Out of prior authorizations	1,300	1,241	5,000

[1] Includes capital outlay as follows: 1967, $17,000; 1968, $200,000; 1969, $500,000.
[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $1,230,000, (1967 adjustment $70,000); 1967, $1,241,000; 1968, $1,805,000; 1969, $2,029,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	$1,915	$1,979	$2,048
11.3	Positions other than permanent	47	56	56
11.5	Other personnel compensation	8	11	11
	Total personnel compensation	1,971	2,046	2,115
12.0	Personnel benefits	180	196	196
21.0	Travel and transportation of persons	157	273	273
22.0	Transportation of things	465	486	486
23.0	Rent, communications, and utilities	43	60	60
24.0	Printing and reproduction	77	88	88
25.1	Other services	10	12	12
25.2	Services of other agencies	2,900	3,725	3,742
26.0	Supplies and materials	490	2,699	2,349
31.0	Equipment	16	415	653
99.0	Total obligations	6,308	10,000	9,974

PERSONNEL SUMMARY

Total number of permanent positions	181	175	175
Full-time equivalent of other positions	4	5	5
Average number of all employees	170	171	171
Average GS grade	5.9	6.0	6.1
Average GS salary	$7,065	$7,377	$7,593

Mr. EVINS. The committee will come to order. We have with us the officials of the Department of Health, Education, and Welfare, the Public Health Service, including Dr. Henry C. Huntley, Director, Division of Health Mobilization, along with Mr. Robert J. Wallace, Financial Manager; Dr. Carruth J. Wagner, Director, Bureau of Health Services; Ralph Bahn, Financial Manager, Bureau of Health Services; Dr. Eugene H. Guthrie, Associate Surgeon General; Mr. Bert J. Skinnard, Division of Finance, Office of the Surgeon General; and Mr. Robert C. Harris, Division of the Budget, Office of the Secretary.

We are very pleased, gentlemen, to hear you regarding your fund needs and requirements.

Dr. Huntley, do you have a statement for us?

Dr. HUNTLEY. Yes.

Mr. EVINS. You may, if you wish, place your statement in the record, or highlight it, as you wish.

GENERAL STATEMENT

Dr. HUNTLEY. I would be happy to do so. If you wish, I will attempt to summarize this in the interest of time for the committee.

Mr. EVINS. Very fine.

(Dr. Huntley's prepared statement follows:)

Mr. Chairman and members of the committee, I wish to express my appreciation for this opportunity to present the emergency health activities program of the Public Health Service.

The primary objective of emergency health services is to provide for continuity of health programs in time of disaster and to assure that medical care will be provided for the millions of citizens who may become casualties in the event of a national emergency or a major disaster. There are a number of program elements essential to carrying out this primary objective.

The program presently places primary emphasis on increasing the disaster capability of existing community hospitals.

HOSPITAL RESERVE DISASTER INVENTORY

Through the hospital reserve disaster inventory medical supplies of the type needed for victims of a major disaster such as bandages, antibiotics, anesthetics and sutures are being added to hospital inventories. These materials are rotated through the hospital's normal supply system to insure that they are kept up-to-date. At present, the average hospital has sufficient supplies to operate for only 5 days. These additions will eventually insure a capability for at least 30 days for every hospital in the Nation. To date, contracts have been developed with over 400 hospitals with an average bed size of 100 to accept, store and rotate this hospital reserve disaster inventory.

AFFILIATION OF PACKAGED DISASTER HOSPITALS WITH EXISTING HOSPITALS

The program of affiliating our 2,573 packaged disaster hospitals with existing hospitals was begun in June 1967, and to date over 400 contracts have been signed with the community hospitals agreeing to develop an operational plan to provide staffing and, to the extent feasible, to rotate many of the pharmaceuticals. We have programed the affiliation of 700 packaged disaster hospitals for fiscal year 1968. In an emergency, these prepackaged 200-bed disaster hospitals with a capability of 30 days' operation can be rapidly assembled to function as an additional community resource. In this way, the prepackaged hospital supplements the existing hospital and medical care system of the community and becomes a vital element in the comprehensive emergency health plan. The community hospital develops plans for emergency operation and staffing of its own regular facilities, and, with the aid of guidelines and training materials supplied by the Public Health Service, trains its own staff and other health care manpower in the community in the assembly and operation of the prepackaged emergency hospital provided by the Federal Government. Up to the present time community hospitals have agreed to carry out their responsibilities in both the hospital reserve disaster inventory and packaged disaster hospital programs without any additional administrative costs being charged to the Public Health Service.

EMERGENCY MEDICAL SUPPLY DEPOTS

The emergency medical stockpile depots assure that medically acceptable stocks are on hand at all times and eliminate unnecessary waste by maximum possible rotation of the reserve stocks. Current stocks are transferred to other agencies where they will be used before expiration of their useful life. Stocks so transferred are replaced with fresh materials. To date, there have been rotation agreements covering stock exchanges to the value of approximately $10 million. These agreements are principally with the military services, the Veterans' Administration, the AID program, and the supply services of other elements of the Public Health Service. Some of this stock has been loaned to the Defense Department to meet immediate needs in Vietnam.

Portions of the medical stockpile provide reserves for emergency medical care requirements of the Federal Government, States, and local communities. We have an agreement with the American National Red Cross under which large quantities of cots and blankets are routinely loaned to meet urgent natural disaster requirements.

In 1966, four depots for storage and distribution of emergency medical supplies were closed for reasons of efficiency and economy. Two additional depots were closed in 1967, and a consolidation of three is planned in 1968. This will leave 11 in operation, which is the optimum number of depots needed at present, for the storage and issue of new and replacement stocks and for resupplying and updating older prepackaged disaster hospitals.

BUDGET REQUEST FOR FISCAL YEAR 1969

ACQUISITION OF STOCKS

During 1968, about $1.6 million is being used to refurbish 350 of the most recently acquired packaged disaster hosiptals, and for the partial refurbishment of another 350 of these hospitals. An amount of $1,400,000 was used to obtain hospital reserve disaster inventory unit supplies for 70,000 beds. The utilization and substitution of previously purchased stocks available in the depot system considerably reduced the new procurement costs.

For 1969, about $2.9 million is recommended for procurement to permit us to: (1) refurbish 200 packaged disaster hospitals; (2) assemble 25 natural disaster hospitals; and (3) provide supplies for disaster inventory units for approximately 21,000 beds.

We anticipate that we will have agreements through the agencies and professional groups concerned in 1969 on the type of intravenous system that will be most effective under disaster conditions so that we can proceed with procurement of this essential item.

Together, the refurbished packaged disaster hospitals and the hospital reserve disaster inventory on the shelves of community hospitals will provide a capability for medical care for large numbers of injured survivors of any type of disaster when normal sources of resupply or additional beds are not otherwise available.

INVENTORY MANAGEMENT

About $3.7 million is recommended for this purpose, a slight reduction below the 1968 level. This will provide for continued depot operations including warehousing, packaging and preservation of materials, quality control program, and transportation of stockpiled materials. Included in the estimate is $250,000 for the beginning of a program of inspection of the older packaged disaster hospitals in the field. Funds have not been available for this purpose for the past 4 years, and many of these hospitals need such things as oiling and running of generators, repackaging broken boxes, and inspecting many items to determine if replacement or repair is needed. Funds recommended will permit us to inspect 275 of these packaged disaster hospitals in the field.

STOCKPILE MANAGEMENT

About $640,000, a slight increase above 1968, will provide for the continuation of stockpile management activities. This item supports the staff responsible for the overall medical stockpile management activities including policy determinations, procurement, accountability, and the cost of operating the inventory control system. An increased burden is thrown on the stockpile management activity for scheduling the placement of medical supplies on the shelves of community hospitals. Accountability and inventory control are becoming increasingly complex.

EMERGENCY HEALTH TRAINING AND COMMUNITY PREPAREDNESS

We recommend about $2.8 million be made available for emergency health training and community preparedness activities, about $190,000 above the 1968 level. Of this amount, $100,000 is requested for program development at the State level. We plan to develop contracts with State health departments to expand and develop training programs through their ongoing training activities using their personnel. These programs will be directed to the community and hospital level, particularly to those communities in which the community hospital has an affiliated prepackaged disaster hospital. About $40,000 of the increase will be devoted to the development of training aids and materials to facilitate the orientation of hospital staffs in problem areas in which they must be knowledgeable if the best medical care is to be provided to victims of a disaster.

The balance of the increase proposed, about $50,000, is required for built-in requirements such as increased pay costs and 1 extra day of pay above the stated annual rate.

A great portion of this fund request provides for our field staff in the States and the regional offices who are working with the States and the communities in emergency planning and training activities, and with the individual hospital administrators and staffs in contract development, and in assisting in their orientation and understanding of the resources provided by the packaged disaster hospital and the hospital reserve disaster inventory unit in any disaster.

In addition, the field personnel also provide for the organization of medical self-help training for the general population. In fiscal year 1968, over 2 million persons will be trained in medical self-help.

Included in the total of $2,773,000 for emergency health training and community preparedness are funds to assure immediate Public Health Service response to natural disasters. This program is stimulating the development and training of medical and surgical teams staffed from Public Health Service hos-

pitals to fly into any State upon request of State and local authorities to provide immediate medical care and assistance.

In conclusion, the Public Health Service is striving to establish and maintain a highly efficient emergency health capability. Through this emergency health activities program, which has proven operationally effective in past disaster situations, a mechanism has been established which enables communities to be self-sustaining and to cope with the circumstances associated with any natural or nuclear disaster affecting the health and the lives of its people.

I will be pleased to answer any questions you may have.

PROGRAM STATUS

Dr. HUNTLEY. As you may recall, last year when we appeared before you we had embarked on a program which would place the primary responsibility for emergency health services in the community hospital and the staff of the community hospital, doing this through affiliation of the packaged disaster hospitals that had been available to us for the past 10 years and through the placement of supplies on the shelves of the existing community hospitals. This program was just initiated at the time we met with you last year. It has developed very well. In fact, it has exceeded our expectations in terms of the response of the community and the hospitals to this program. It has been accepted in all States. It has been accepted by the medical profession, the hospital associations and by the State and local civil defense directors.

We have programed for this year the affiliation of 700 of our packaged disaster hospitals with the community hospitals. This places the responsibility on the community hospitals of developing a plan of operation and a staffing pattern for the packaged disaster hospital, and on the community for providing custody for the packaged disaster hospital and its supplies, and also for providing the supporting services that are necessary for operation of the hospital, such as communications, transportation, police protection, welfare services, and so forth.

We are programing the affiliation of 700 packaged disaster hospitals for this year. To date, we have about 450 contracts with community hospitals all over the country. There is no question but that we will be able to reach our goal.

The other part of the stockpile program is for the placement of emergency medical supplies on the shelves of community hospitals so that in a major disaster or a cutoff situation, such as a national emergency, they would be able to continue operation for at least a period of 30 days. In relation to this, we now have contracts with approximately 500 community hospitals, with an average size of 100 beds each, across the country.

We have programed for this year contracts with 700 community hospitals providing supplies for approximately 70,000 hospital beds. We have as yet run into no major problems in this program. As I indicated, it is well accepted and appears to be going quite well. We feel this will benefit us in a number of ways. It will improve the status of preparedness of the community and the individual hospitals, and also will help us a great deal in the rotation of our stockpile supplies which has been one of our major critical problems over the years.

In our depot system we are continuing to develop a program of consolidation of our depots. In 1966 four depots were closed. Two additional ones were closed in 1967. A consolidation of three is planned in 1968. This will leave 11 in operation, which we consider at this moment to be the optimum needed. We are planning to close the depots located at Carterville and Seneca, Ill., and at Neosho, Mo., and consolidate them into Government-owned space at Dixon, Ill.

During fiscal year 1968, to refurbish the packaged disaster hospitals which were purchased as early as 1953, we are utilizing about $1,600,000. This, plus the materials that are already in the depots, will provide enough money and enough stocks to completely refurbish 350 of the packaged disaster hospitals and to provide the hard goods for the refurbishment of an additional 350 packaged disaster hospitals. So that in our contracts of affiliation we will be able to provide the hospitals and the community with a functional element or unit which they have not had in the past.

For the provision of supplies for the 70,000 community hospital beds that we have programed this year, we again are utilizing a considerable amount of stocks that were already present in our depot system and an additional $1,400,000 in new procurement for this purpose.

For 1969 we are recommending $2,884,210 for the procurement of new medical materials. This will permit us to refurbish completely 200 of the older packaged disaster hospitals that have been prepositioned in communities over the years. It will also enable us to assemble 25 natural disaster hospitals at a cost of approximately $3,600 each, and will provide emergency medical supplies for approximately 21,000 beds. We anticipate that we will not have any difficulty in obtaining agreements with community hospitals to accomplish this program in this coming fiscal year.

In inventory management, which includes among other things the depot system, we are recommending $3,680,000, which is a slight reduction below the 1968 level. This will provide for continued depot operations, including warehousing, packaging, preservation of materials. Included in this amount is a new item of $250,000 for the beginning of a program of inspection of the older packaged disaster hospitals which have been placed out in the communities over the years.

None of these, I might add, have been looked at in the past 5 years primarily because of lack of funds and the question of reorientation of the program under the direction of the Bureau of the Budget and an interagency committee.

This $250,000 request will provide us with money this coming year to initially inspect 275 of the older packaged disaster hospitals.

In stockpile management, this budget item supports the staff responsible for the overall medical stockpile management activities, including policy determination, procurement, accountability, and the cost of operating the inventory control system. We are asking for $637,000, which is a slight increase above 1968. The actual increase amounts to $32,000; $15,000 of the increase is for increased computer time which will assist us in the management of the inventory and accountability aspects of our program. The remainder of this increase is for mandatory increases in terms of pay increases, salary increase, and an extra day of pay for 1969. In emergency health training and community preparedness, we are recommending $2,773,000 which is $192,640 above

the 1968 level. Of this amount, $100,000 is requested for program and contract developments with State agencies.

We plan to develop contracts with State health departments for training purposes through their ongoing programs, utilizing personnel that would be hired at the State level. These programs would be directed to the community at the hospital level, particularly those hospitals that are affiliated with the packaged diasater hospital. About $40,000 of this increase will be utilized for the development of training aids and materials to facilitate the orientation of the community hospital staffs in the problem areas. The balance of the increase is required for the built-in requirements, such as increased pay costs and one extra day of pay above the stated annual rate.

In addition to the utilization of existing field personnel for the development of contracts, training, and so forth, these program representatives are also managing the medical self-help training program. This year out of advances received from the Office of Civil Defense we were able to train some 2 million persons in medical self-help.

You may be aware of the fact, Mr. Chairman, that the day before yesterday in Tennessee the Governor made the first Humanitarian Award to a Miss Beverly Woodward from your district. I might say that this was well deserved on the basis of information that has been provided us.

Mr. EVINS. The young lady saved the life of her father by using good judgment.

Dr. HUNTLEY. Yes.

We have other similar awards in process at the present time because there have been many accomplishments in lifesaving actions resulting from this program.

You may be interested in the fact that medical self-help is being used in many of the community action programs for the training of their clientele, the people that they serve, because this does provide them with a background of knowledge that is necessary to meet the everyday emergency medical problems which exist among this group of people. We have done a considerable amount of work this year in natural disasters. We provided direct assistance through the medical stockpile program this fiscal year to some 45,000 people who were involved in natural disasters of one type or another.

We are developing the natural disaster hospital which will be stored in situations where a packaged disaster hospital would be too bulky or could not be transported.

As an example of this, we now have a contract with the medical society, the community hospital and the civil defense agency located at Enid, Okla., whereby they have agreed to provide transportation, the necessary medical staff and personnel to transport the natural disaster hospital along with the trained staff on request to any point within 75 miles of Enid, Okla., particularly in relation to the tornadoes which occur in this area.

We are developing similar contracts elsewhere. One other thing: We are working with the Division of Direct Health Services, the hospital system of the Public Health Service, to develop teams which will be available on request from a State, and other health organizations to provide assistance to communities in natural disasters.

Mr. EVINS. Very good, Dr. Huntley. That is an excellent statement on your activities and services.

Now, for the record, tell us how many warehouses the Public Health Service maintains currently.

Dr. HUNTLEY. Currently we are maintaining 13.

COMMUNITY HOSPITAL AFFILIATION

Mr. EVINS. Tell us how many community hospitals you are supporting or maintaining.

Dr. HUNTLEY. Between the packaged disaster affiliation program and the hospital reserve inventory program, we now have contracts actually with some 700 community hospitals.

Mr. EVINS. 700 community hospitals?

Dr. HUNTLEY. Yes.

Mr. EVINS. Are these community hospitals designated as packaged disaster hospitals?

Dr. HUNTLEY. No.

Mr. EVINS. The community hospitals are separate. How many packaged disaster hospitals are there?

Dr. HUNTLEY. We have contracts for affiliation of the packaged disaster hospitals with approximately 450 community hospitals.

Mr. EVINS. Are these included in the 700?

Dr. HUNTLEY. Let me clarify my terminology. When I say we have contracts with 700 community hospitals, I am speaking now of the existing community hospitals. Now, with these community hospitals we have contracts with 450 of them for affiliation of a packaged disaster hospital.

Mr. EVINS. The 450 is included in the 700?

Dr. HUNTLEY. Yes.

Mr. EVINS. That is what I was trying to determine. It is not 450 in addition to the 700.

Dr. HUNTLEY. In some of them, we have contracts for both the packaged disaster hospitals and hospital reserve disaster inventories.

Mr. EVINS. Before you started your community hospitals and packaged disaster hospital programs under contract, you turned this emergency medicine over to the hospitals and you had to supervise them. Under the new arrangement, they do the supervising, and report to the Public Health Service. Is that a fair summary?

Dr. HUNTLEY. That is a fair statement except for the fact that we still have the responsibility for accountability and we will be beginning this program soon.

Mr. EVINS. How much in medicine, dollarwise, is invested in the 700 community hospitals under the packaged disaster program?

Dr. HUNTLEY. At the present time we have on the shelves of the community hospitals, as a part of the hospital reserve disaster inventory, and as part of the packaged disaster hospital supplies, about $1 million.

Now, this does not include, of course, the total cost of the packaged disaster hospitals which are stored in the community.

Mr. EVINS. You have about $1 million in medicine installed in these communities.

Dr. HUNTLEY. $1 million on the shelves of community hospitals, yes.

INSPECTION PROGRAM

Mr. EVINS. As a result of questioning by this committee a few years ago regarding inspections, didn't you inaugurate an inspection system?

Dr. HUNTLEY. When the Public Health Service took over this program in 1961, there was an inspection program. When the program came under study by the Interagency Committee, including the Bureau of the Budget, and so forth, funds were withheld for all of these activities and there has not been an inspection program for a little over 4 years now.

Mr. EVINS. For 4 years there has been no inspection. You do have reports from the doctors of the community hospitals identifying what is there, and it amounts to about $1 million. Now, other than these reports, that is about the current status?

Dr. HUNTLEY. We have Public Health Service personnel in most of the States. These are the people who will be and are going into these hospitals now on an average of once every 6 months.

COMMUNITY MEDICAL SUPPLY INVENTORIES

Mr. EVINS. How often do you have to rotate this medicine?

Dr. HUNTLEY. The average shelf life of the stocks that we have is about 4 or 5 years. The least time of any of them we have in the system is about 2 years.

Mr. EVINS. The shortest time is 2 years, but most of it will last 4 years?

Dr. HUNTLEY. Four, or longer; yes.

Mr. EVINS. Are the doctors in these community hospitals allowed to use this medicine in stock for their own patients, if they determine they need it and desire to do so?

Dr. HUNTLEY. The hospital under the contract agrees to utilize this medicine and replace it in kind. When our people inventory the stocks of the community hospital, our primary purpose is to see that they are maintaining the inventory level of all the drugs that were supplied them.

Mr. EVINS. The point I am trying to arrive at: Is the doctor permitted to use this for his own patients who are able to pay for drugs otherwise?

Dr. HUNTLEY. Yes.

Mr. EVINS. Provided he will replace it?

Dr. HUNTLEY. Yes.

Mr. EVINS. Do you have any checks on this to see that it is being replaced?

Dr. HUNTLEY. We are beginning to check now because, these stocks have been on the community hospital shelves for only 6 months.

Mr. EVINS. I can understand that doctors like Uncle Sam to stock their shelves with medicine. Even the extension of credit is a very valuable assistance.

Dr. HUNTLEY. Yes. The contracts are with the community hospitals themselves. We look to the hospital to maintain and to replenish their inventories.

Dr. GUTHRIE. I think, Mr. Chairman, that these supplies are in the hospitals under the direction, usually, of the hospital pharmacy rather

than available as open stock for anybody's use. The medicines as dispensed in the hospital usually come through the pharmacy control. This rotation system would, in connection with the hospital's regular pharmacy stock, come under their control system.

Mr. EVINS. There is a control there.

Doctor, how much is the actual ultimate estimated value of the medicines on shelves when you have your 450 contracts consummated?

Dr. HUNTLEY. When the 450 contracts for the affiliation of packaged disaster hospitals and for supplying 70,000 beds of community hospitals with disaster inventories are completed, this will amount to approximately $3 million.

1969 APPROPRIATION ESTIMATES

Mr. EVINS. Now, you have your 13 warehouses, 700 community hospitals, which include 450 packaged disaster hospitals under contract, and you are asking for an appropriation of $2,400,000 and the carryover of about $7,500,000 from last year; is that correct?

Dr. HUNTLEY. That is correct.

Mr. EVINS. A total program of $9,974,210.

Dr. HUNTLEY. Yes, of the $9,974,210, $2,400,000 is requested in new obligational authority and $7,574,210 represents unobligated balances brought forward from 1968.

Mr. EVINS. You had about an $8 million carryover from 1967 to 1968.

Dr. HUNTLEY. Yes.

Mr. EVINS. Then under Public Law 218 of the 90th Congress, which applied to the withholding of a certain amount of appropriations, you held back $7,707,210.

Dr. HUNTLEY. Yes.

Mr. EVINS. You want to have this reappropriated?

Dr. HUNTLEY. Yes.

Mr. EVINS. Now, of this total amount of $9,974,210, as you have already testified, $2,884,210 is for acquisition of new stocks, and this will get you about $3 million in new stocks, plus your $1 million that is already on the shelves?

Dr. HUNTLEY. Yes.

Mr. EVINS. There will be about $4 million of medicines on the shelves?

Dr. HUNTLEY. Not all of it will be medicines.

Mr. EVINS. Acquisition of stocks is what it says.

PACKAGED DISASTER HOSPITALS

Dr. HUNTLEY. Yes, but not all medicines. Part of it will be medical supplies and equipment to replace that which has deteriorated in the packaged disaster hospitals.

There is actually about $4,000 worth of medicines in each packaged disaster hospital. The remainder of the $40,000 is in supplies and equipment.

Mr. EVINS. What is the nature of your equipment?

Dr. HUNTLEY. We have an X-ray machine, an anesthesia machine, operating room supplies, tables, lamps, surgical instruments, 200 cots, blankets, and pillows.

Mr. EVINS. How many of these hospitals are there?

Dr. HUNTLEY. These are hospitals that were purchased beginning in 1953 by the Federal Civil Defense Administration. There are a total now of about 2,573 of these hospitals.

Mr. EVINS. You have about 2,573 hospitals which the old Federal Civil Defense Administration purchased?

Dr. HUNTLEY. Yes.

Mr. EVINS. They are just used as facilities for stockpiling?

Dr. HUNTLEY. Yes.

Dr. GUTHRIE. They are the packaged disaster hospitals.

Mr. EVINS. Yes; blankets and medicines are stacked away?

Dr. GUTHRIE. Yes.

Dr. HUNTLEY. Yes.

Mr. EVINS. I recall a number of years ago there was a news report about pilferage and waste of these packaged supplies.

Dr. HUNTLEY. There has been a very modest amount of supplies stolen over the past 5 years that I am aware of. I have no estimate of this, but it is somewhat less than $100,000.

Mr. EVINS. You are not placing expensive X-ray machinery in private hospitals, are you?

Dr. HUNTLEY. No. The equipment again will be under the custodianship of the community, the State and local civil defense directors.

INVENTORY MANAGEMENT ACTIVITIES

Mr. EVINS. Besides your acquisition of stocks, which includes both medicines and equipment, in 1968 your inventory management was $3,819,000, next year it is estimated to be $3,680,000. You show in your budget a decrease.

Dr. HUNTLEY. There are certain programs in which there is a decrease.

Mr. EVINS. In total there is a decrease.

Dr. HUNTLEY. The total is a decrease of $139,000, but we are asking for a new item in here of $250,000 for insepction teams to inaugurate an inspection program.

INSPECTION TEAMS

Mr. EVINS. That is an increase, the inspection teams?

Dr. HUNTLEY. Yes.

Mr. EVINS. How many do you expect to have on these teams?

Dr. HUNTLEY. About three people. They will have additional personnel to assist them in the repackaging.

Mr. EVINS. Do you plan to visit all the packaged disaster hospitals?

Dr. HUNTLEY. No. This will provide for the inspection only of around 275 of these hospitals. We plan to go into communities where the older hospitals have been stockpiled and where they have not been looked at for more than 5 years.

Mr. EVINS. I think with $3,680,000 you could send a man to all of them.

PHS–GSA EMERGENCY MEDICAL SUPPLY DEPOT SYSTEM

Dr. HUNTLEY. Well, there are other things essential in this $3,680,000; namely, the depot system and the operation of it.

Mr. EVINS. All right. Let us talk about the depot system now. You have 13 depots?

Dr. HUNTLEY. Yes.

Mr. EVINS. You testified that you closed four in 1966, two in 1967, and you will consolidate three in 1968?

Dr. HUNTLEY. Yes.

Mr. EVINS. Where are these three located that are supposed to be consolidated?

Dr. HUNTLEY. One at Carterville, Ill., one at Seneca, Ill., and one at Neosho, Mo.

Mr. EVINS. Where do you propose to consolidate these three?

Dr. HUNTLEY. We propose to consolidate these three into Government-owned space at Dixon, Ill.

Mr. EVINS. The space at Dixon is already owned?

Dr. HUNTLEY. Yes.

Mr. EVINS. You have a warehouse there?

Dr. HUNTLEY. Yes.

Mr. EVINS. Is it large enough to accommodate your needs?

Dr. HUNTLEY. It is.

Mr. EVINS. I assume you are doing this in order to promote efficiency and economy?

Dr. HUNTLEY. This is the purpose.

We have calculated the saving to the Government by consolidation of the three depots. Our calculations are that this will result in a net savings of $146,000.

Mr. BOLAND. Who are these depots owned by at Carterville, Seneca, and Neosho?

Dr. HUNTLEY. Carteville and Seneca are Government-owned space. The one at Neosho is owned by a private corporation.

Mr. EVINS. Is the one at Dixon, Ill., also owned by the Government?

Dr. HUNTLEY. Yes.

Mr. EVINS. In other words, you have three owned by the Government and one under contract, and you propose to put the two owned and the one under contract all at Dixon, Ill.?

Dr. HUNTLEY. Yes.

Mr. EVINS. And this will result in savings to the taxpayers?

Dr. HUNTLEY. Yes, sir. We have estimated, and we have good indications that this will result in a saving of $146,000.

Mr. EVINS. Per year?

Dr. HUNTLEY. Per year.

Mr. EVINS. One of our colleagues has called to the attention of several Members of the Congress that your calculations are inaccurate, that this does not provide for that large a saving.

CONSOLIDATING AT DIXON VERSUS NEOSHO

Dr. HUNTLEY. Yes. The question that has been raised on this is whether it would be less expensive and more beneficial to the Government to consolidate at Dixon or to consolidate at Neosho.

A GAO report on this which was requested by the Member of Congress indicated that if we consider the question of loss of income tax that the total saving to the Government by consolidating at Dixon versus Neosho was only $3,000 a year. However, I would like to point

out that this did not include the necessary capital investment that would be incurred by the Government, by GSA.

Mr. EVINS. How long have you had this depot at Neosho?

Dr. HUNTLEY. This was leased again in 1957 by the Federal Civil Defense Administration.

Mr. EVINS. How much does the contract call for by way of rental payment annually?

Dr. HUNTLEY. The contract had called for $111,000. When it became evident that we were considering moving out, an offer was made for rent which would, on the basis of the total space needed, be $104,000.

Mr. JONAS. How much is that per square foot?

Dr. HUNTLEY. That is 40 cents per square foot.

Mr. JONAS. How do you get that amount with 190,000 square feet?

Dr. HUNTLEY. To consolidate at Neosho we would require an additional 70,000 square feet of space to put our stocks which are now at Seneca and Carterville into Neosho.

Mr. JONAS. If you are just talking about Neosho as it is now, your 140,000 square feet at 40 cents a square foot would be only about $75,000, wouldn't it?

Dr. HUNTLEY. Yes, but if we pick up the additional 70,000 square feet that are required for storage of stocks——

Mr. JONAS. Right at the moment we are not talking about that, we are talking about the rent for warehousing at Neosho. So it is $76,000——

Dr. HUNTLEY. The present rent. If we did not consolidate at Neosho that would be it.

Mr. JONAS. They say that in your calculation you had it up to $79,000, or an error of $3,365, approximately. How did that come about?

Dr. HUNTLEY. The reason for that error was that since the 31st of May, 1967, we have not been paying rent on an airway amounting to some 3,500 square feet of space, between three and four thousand feet. Anyway, it reduced it by this amount of money.

Mr. JONAS. How many square feet are you planning to use at Dixon?

Dr. HUNTLEY. About 300,000 square feet.

Mr. JONAS. If you use 300,000 square feet at Neosho it would raise the price substantially, wouldn't it?

Dr. HUNTLEY. Yes.

Mr. JONAS. But you are only planning to use 240,000?

Dr. HUNTLEY. It would actually be about 265,000 square feet if I am not mistaken.

Mr. JONAS. How can you use a lesser amount of square feet at Neosho than at Dixon?

Dr. HUNTLEY. We are planning to crowd it a little bit and also, for a modest amount of material that we already have packaged, it is possible to stack this, about 15 to 20 percent higher.

Mr. EVINS. What is the nature of the Neosho storage? Is this a cave?

Dr. HUNTLEY. This is a limestone cave; yes, sir.

Mr. EVINS. Does it have any defects, or are there other reasons for moving?

Dr. HUNTLEY. The GSA has stated that it does not meet their specifications for underground storage. They have estimated that to rehabilitate it to the point where it would meet their specifications, a preliminary engineering estimate by GSA was that it would cost $439,000 to provide flooring and to provide the proper dehumidification equipment.

Mr. EVINS. What kind of a flooring would this be, wood or concrete flooring?

Dr. HUNTLEY. Concrete flooring.

Mr. EVINS. And $439,000 is needed to floor the cave for the dampness?

Dr. HUNTLEY. And to provide the necessary equipment.

Mr. EVINS. To prevent against dampness?

Dr. HUNTLEY. The necessary dehumidification equipment to provide against dampness, yes.

Mr. JONAS. What is stored there?

Dr. HUNTLEY. We have there presently about $6,637,734 worth of medical supplies.

Mr. JONAS. Describe the supplies.

Dr. HUNTLEY. This includes all types of medical equipment and supplies, and some drugs, some cots, blankets, surgical instruments, X-ray equipment, operating tables.

Mr. JONAS. What is your rate of deterioration there as compared with your Government-owned warehouse space?

Dr. HUNTLEY. We do not have any comparison on this. There has never been a satisfactory study. We have asked this question of other agencies, whether or not there has been any firmed-up study indicating any differential.

Mr. JONAS. You have been at Neosho for 10 years. It would seem to me prudence would have dictated that some study should have been made before now of the rate of deterioration. Why do you take GSA's word it will cost $400,000 to put the warehouse in shape when it may be good enough as it is?

Dr. HUNTLEY. Well, we would like very much to have information on the question of deterioration, but we simply do not have a study which I would conceive of being a rather long-term study before a specific determination can be made.

Mr. JONAS. Have you discarded a lot of material from Neosho?

Dr. HUNTLEY. Over the years in all of our depots we have discarded a considerable amount of material.

Mr. JONAS. Has the rate of deterioration been greater at Neosho than in wooden warehouses?

Dr. HUNTLEY. No. There has been no appreciable difference. It has depended primarily upon the types of material that were stockpiled and the amounts.

Mr. JONAS. What will it cost to rehabilitate the facilities at Dixon?

Dr. HUNTLEY. GSA has assured us that there will be no capital outlay.

Mr. EVINS. Doctor, besides the estimated savings of $146,000, are there other advantages from the move or consolidation?

Dr. HUNTLEY. Well, the area to be served covers a total of nine States. The population to be served is concentrated in northern Illinois, Milwaukee, St. Louis, the Minneapolis area. The depot at Dixon, the proposed depot, would be closer to some 13 million people

including the St. Louis metropolitan area which is actually some 30 miles closer to Dixon than to Neosho.

Mr. EVINS. This Dixon facility will serve the St. Louis and Chicago areas also?

Dr. HUNTLEY. Yes; the depot at Neosho would be closer to approximately 2½ million people.

Mr. EVINS. The depot serves 13 million and 2½ million would be closer to Neosho?

Dr. HUNTLEY. Yes.

LOCATION OF 13 DEPOTS

Mr. JONAS. While he is there, where are your 13 located?

Mr. EVINS. Read them into the record.

Dr. HUNTLEY. Bastrop, Tex., Boyers, Pa., Carterville, Ill., Clearfield, Utah, Dixon, Ill., Neosho, Mo., Prairie, Miss., Seneca, Ill., Shelby, Ohio, Spokane, Wash., Stockton, Calif., Wampum, Pa., Watertown, Mass., and Williamsburg. Va.

Mr. BOLAND. How many are Government-owned of the 13?

Dr. HUNTLEY. All but three are Government-owned facilities.

Mr. BOLAND. Would you detail the three that are not Government-owned?

Dr. HUNTLEY. Boyers, Pa., Wampum, Pa., and Neosho, Mo.

NEOSHO DEPOT

Mr. JONAS. If Neosho is a bad location why did you move 3 million pounds in there in 1966?

Dr. HUNTLEY. This was the result of closing of other depots and this was the only available space that we had at the time.

Mr. JONAS. Did you have a ruling from GSA that it was not suitable at that time?

Dr. HUNTLEY. A determination had not been made at that time.

Mr. JONAS. Yet you went ahead and moved 3 million pounds more in there.

Dr. HUNTLEY. Yes, sir.

Mr. JONAS. At a substantial cost.

Dr. HUNTLEY. Yes, sir.

Mr. JONAS. Now you want to move that plus everything else out.

Dr. HUNTLEY. Yes.

Mr. JONAS. Into wooden frame buildings at ground level. How are you going to protect this material in the event of blast or fallout?

Dr. HUNTLEY. The information that has been provided us from the classified source indicates that there is no danger from blast in this location, that the amount of fallout to be expected will not be significantly different at ground level from the amount of fallout to be expected at Neosho. It is therefore considered to be a safe location.

Mr. JONAS. That is amazing. Here we are putting fallout shelters in basements and you tell us now there is no more danger to ground level warehoused material from fallout than underground facilities protected by 70 feet of solid rock.

Dr. HUNTLEY. The material itself will not be affected by the fallout. The only problem will be getting to it and transporting it to where

it is needed. This problem will be no different at Neosho than it will be at Dixon.

Mr. JONAS. Do you mean you cannot contaminate medicine?

Dr. HUNTLEY. Not by the amount of fallout that is expected, no.

Mr. JONAS. We had better change some of our thinking, when we get the civil defense people in here. Do you know how much money we are spending putting all this equipment down in basements?

Dr. HUNTLEY. Well, this is for the protection of individuals. Now, individuals can be affected by fallout.

Mr. JONAS. Yes; but we had better scatter this material around in office buildings, then if it is not in any danger of being contaminated from fallout.

Dr. HUNTLEY. Again, sir, I think that the basis of the program of the Office of Civil Defense is the protection of the individual in a fallout shelter, and there is need for supplies so that he can be maintained in a shelter for a given period of time.

Mr. EVINS. This committee for several years has been suggesting placing of supplies in Government-owned warehouses rather than in rented space.

Dr. HUNTLEY. Yes.

Mr. EVINS. You have been moving in that direction for the past several years?

Dr. HUNTLEY. Yes.

Mr. EVINS. You estimate it will provide a savings of $146,000. How many people will be closer to the Dixon Depot?

Dr. HUNTLEY. The depot at Dixon will be closer to 13,500,000 people.

Mr. EVINS. It will be closer to 13½ million people?

Dr. HUNTLEY. Yes; the one at Neosho is closer to 2½ million people.

Mr. JONAS. Yes; but you have other warehouses that are closer to this same 13 million people. This one warehouse won't serve the 13 million. Now, if you moved to New York City, you could put up the same argument, you could locate all your warehouses in just three metropolitan areas of the country.

Dr. HUNTLEY. Yes; however, we also have these warehouses in Pennsylvania which serve the northeastern part of the country.

COST TO MOVE

Mr. JONAS. What is it going to cost you to make this move?

Dr. HUNTLEY. I can give you the exact figures, sir. The cost of moving to Dixon is $170,500.

Mr. JONAS. What is that based on?

Dr. HUNTLEY. This is based upon GSA rates of movement of this material for the distance involved.

Mr. JONAS. Does that include the cost of transportation?

Dr. HUNTLEY. The loading, unloading, and the cost of transportation.

Mr. JONAS. My information is that it will cost over that amount of money just according to the motor freight tariff schedule, based on rates of $2.16 for 20,000 pounds or $1.87 for 30,000 pounds, and $1.40 for 40,000 pounds, and these are the published rates. That does not leave anything over for crating, handling, loading, or unloading. You cannot get this stuff moved by just paying the freight bill.

Dr. HUNTLEY. I am sorry, I am unable to completely answer this question because I am not familiar with the points that you have raised. We have this figure from GSA as the total cost of movement.

Mr. EVINS. Doctor, is it the committe's understanding that both GSA and GAO have both made studies and recommendations on this matter?

Dr. HUNTLEY. Yes. We have here a copy of the report by the General Accounting Office. This report did not consider in the cost estimates the factor of the necessity for capital improvements nor did it consider the factor of the operations in terms of the movement of the packaged disaster hospitals which are now stored in communities, into the depots, to be refurbished and for their shipment back to the communities. Because the depot at Dixon is closer to the majority of the population to be served there is a significant difference of $93,000 in this cost.

Mr. BOLAND. Is there a significant difference, too, in the maintenance and operation of the one depot at Dixon as compared to the centers at Carterville and Neosho——

Dr. HUNTLEY. Yes. The cost of operation in terms of personnel at Dixon versus Neosho, there is a $45,000 difference in favor of Neosho.

Mr. BOLAND. Annually?

Dr. HUNTLEY. Annually, yes.

Mr. JONAS. Of course, I, for one, think that just because you are closer to 13 million people at Dixon, you are closer to 11 million than you would be at Neosho, should not be compelling. The 2 million are just as important as the 13 million. Your argument would be proper to be used against dipersal but I thought we were trying to disperse these things equally around the country so that people who live in relatively sparsely settled communities would have the same opportunity for a little protection. We are not just dealing in protection of people in metropolitan areas, are we?

Dr. HUNTLEY. Well, of course, it is in these metropolitan areas where it is considered that the probability of casualties is greatest. Now, in the more sparsely settled areas protection is offered by the stockpiling of the packaged disaster hospital and the placement on community hospital shelves, existing hospital shelves, of medical supplies through the hospital reserve disaster inventory. When fully implemented this program would enable existing community hospitals to function for a total period of 30 days in casualty care treatment. You may be interested to know that the information we have relating to this is that when this program is fully implemented it will result in a saving of approximately 3½ million lives in the event of a national emergency.

Mr. JONAS. Well, you can't do anything but characterize that as pure, unadulterated speculation. It depends on where the bomb is dropped and where the fallout goes, the direction of the fallout.

Dr. HUNTLEY. Yes.

Mr. JONAS. It might not save one life, the fallout might go in another direction, might it not?

Dr. HUNTLEY. Well, we hope that a considerable number of lives will be saved in the event of fallout by the fallout shelter program.

Mr. JONAS. I can't understand how GSA can say you have no capital investment. I am going to watch that closely. A warehouse that houses

industrial equipment, I do not believe can be converted into the warehousing of medical supplies without some capital investment.

STOCKPILE MANAGEMENT ACTIVITIES

Mr. EVINS. In your stockpile you had $605,000 for last year and you are asking for $637,000 for next year, an increase of $32,000. Tell us about the status of the stockpile.

Dr. HUNTLEY. Yes. Of this increase, $15,000 is for additional computer time. This brings the total amount of money available for computer time which is related to the accountability of the inventory, to about $45,000. The remainder of this increase is related to the within-grade salary increases and additional pay costs.

EMERGENCY HEALTH TRAINING AND COMMUNITY PREPAREDNESS

Mr. EVINS. What is the status of your emergency health training and community preparedness program? You asked for $2,580,000 in 1968 and are requesting $2,773,000 in 1969, an increase of $192,640.

Dr. HUNTLEY. Yes. Of this increase we are requesting $100,000 for a new program in developing contracts with State agencies, principally State health departments, to develop teams to go out into the communities, particularly those communities that are affiliated with the packaged disaster hospital program and provide the background of knowledge, information, and organization that will be necessary to implement this program in time of emergency.

Mr. EVINS. Doctor, I happen to have attended an evening meeting in which the Secretary of Health, Education, and Welfare, Secretary Gardner, made his valedictory speech—at least, I term it that. He was making a fine address and he said in substance, that when he took over as Secretary he had a survey made of all the grant-in-aid health programs. I believe he said there were 18 or 20 separate ones and he recommended consolidation of all of them into one.

He said that the Governors and the health commissioners of the States knew what their requirements were. He said they ought to file one application for all of the needs. He made it appear as though things had been greatly streamlined and made more efficient. Do you have it all now where you can file one application and get all these various types of aid? I think that is a little exaggerated, isn't it?

Dr. HUNTLEY. I will defer to Dr. Guthrie.

Dr. GUTHRIE. We have made some progress in that direction. I think he was referring to the partnership-in-health program, legislation which was enacted last year, which did consolidate nine formula grant programs and seven project grant programs into a single formula project grant program which greatly simplified the Public Health Service individual health grants that were formerly highly categorized. This gave the State the option to use those total moneys for their priorities of program as opposed to the Federal priorities.

Mr. EVINS. Some progress is being made in consolidation and in efficiency. Now, the total obligations for 1969 amount to $9,974,210 or slightly under the $10 million of last year. Now, personnelwise, Doctor, you have 41 people in your stockpiling program; is that correct?

Dr. HUNTLEY. Yes.

Mr. EVINS. And 134 in your emergency health training and community preparedness program, for a total of 175?

Dr. HUNTLEY. Yes.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages 3 through 7.

(The pages follow:)

EMERGENCY HEALTH ACTIVITIES

AMOUNTS AVAILABLE FOR OBLIGATION

	1968	1969
Appropriation	$9,000,000	$2,400,000
Transfer to "Operating expenses, Public Buildings Service, General Services Administration"	−52,640	
Unobligated balance brought forward	8,626,850	8,574,210
Cutback from the 1968 President's budget required by H.J. Res. 888	−7,707,210	
Total currently available	9,867,000	
Plus release of reserves for increased pay and postal costs	133,000	
Total available for obligations	10,000,000	9,974,210
Disposition of cutback:		
To be used for pay and postal costs in this account	133,000	
Carried forward for obligations in 1969	7,574,210	
Total cutback	7,707,210	

OBLIGATIONS BY ACTIVITY

	1968 estimate		1969 estimate		Increase (+) or decrease (−)	
	Position	Amount	Position	Amount	Position	Amount
Medical stockpile:						
(a) Acquisition of stocks		$2,995,640		$2,884,210		−$111,430
(b) Inventory management		3,819,000		3,680,000		−139,000
(c) Stockpile management	41	605,000	41	637,000		+32,000
Emergency health training and community preparedness	134	2,580,360	134	2,773,000		+192,640
Total obligations	175	10,000,000	175	9,974,210		−25,790

OBLIGATIONS BY OBJECT

	1968 estimate	1969 estimate	Increase or decrease
Total number of permanent positions	175	175	
Full-time equivalent of all other positions	5	5	
Average number of all employees	171	171	
Personnel compensation:			
Permanent positions	$1,979,000	$2,048,000	+$69,000
Positions other than permanent	56,000	56,000	
Other personnel compensation	11,000	11,000	
Total personnel compensation	2,046,000	2,115,000	+69,000
Personnel benefits	196,000	196,000	
Travel and transportation of persons	273,000	273,000	
Transportation of things	486,000	486,000	
Rent, communications, and utilities	60,000	60,000	
Printing and reproduction	88,000	88,000	
Other services	12,000	12,000	
Services of other agencies	3,725,360	3,742,000	+16,640
Supplies and materials	2,698,640	2,349,210	−349,430
Equipment	415,000	653,000	+238,000
Total obligations by object	10,000,000	9,974,210	−25,790

Summary of changes

1968 enacted appropriation	$9,000,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (space rental)	−52,640
Unobligated balance brought forward	8,626,850
Cutback from the 1968 President's budget required by H.J. Res. 888	−7,707,210
Total currently available	9,867,000
Release of funds in reserve for increased pay and postal costs	133,000
1968 estimated obligations	10,000,000
1969 estimated obligations	9,974,210
Total change	−25,790

	Base		Changes from base	
	Positions	Amount	Positions	Amount
Increases:				
A. Built-in:				
1. Annualization of increased pay costs:				
Public Health Service operations				$21,000
Advance to General Services Administration				11,000
2. Increase pay costs for within grade increases				40,000
3. Increase for 1 extra day of pay above the 52-week base				8,000
B. Program:				
1. Procurement program-medical stockpile:				
Reserve supply inventories for community hospitals				873,210
Replacement of deteriorated materials and refurbishment of packaged disaster hospitals				2,011,000
2. Depot operations		$2,725,000		250,000
3. Stockpile management activities	41	605,000		15,000
4. Emergency health training and community preparedness: Disaster services methods	12	560,360		140,640
Total program increases				3,369,850
Decreases:				
1. 1968 procurement program-medical stockpile				−2,995,640
2. Maintenance and processing of materials-medical stockpile				−360,000
3. Transportation of materials-medical stockpile				−40,000
Total decreases				−3,395,640
Total net changes requested				−25,790

EXPLANATION OF CHANGES

Program increases

1. *Procurement programs, medical stockpile.*—$2,884,210 is proposed for use in 1969 from previously appropriated funds including $873,210 to continue the program of procuring medical stockpile materials to place hospital reserve disaster inventory levels of critical survival supplies in community hospitals. The balance of $2,011,000 would be utilized to continue the program of refurbishing and updating the packaged disaster hospitals to function as an extension of community hospitals in disaster situations and for the assembly of natural disaster hospitals.

2. *Depot operations, medical stockpile.*—$250,000 is proposed for use in 1969 to establish 11 General Services Administration inspection teams to periodically inspect and maintain the packaged disaster hospitals.

3. *Stockpile management activities.*—$15,000 is recommended to strengthen the data processing system so as to maintain better control over the inventories placed in community hospitals and in the medical stockpile system.

4. *Disaster services methods, emergency health training and community preparedness.*—$140,640 is recommended to establish a program of support to State health departments in implementing training and educational programs and for the development and procurement of specialized training aids and materials.

Decreases

1. *1968 procurement programs, medical stockpile.*—A decrease of $2,995,640 represents completion of the 1968 procurement program.

2. *Maintenance and processing of materials, medical stockpile.*—A decrease of $360,000 reflects completion of a program to reprocess material stored at manufacturers' facilities and the reduction of stocks stored, rotated and tested at manufacturers' sites.

3. *Transportation of materials, medical stockpile.*—The decrease of $40,000 reflects a reduction in the amounts of medical stockpile material required to be transported to community sites and between depots in 1969.

ESTIMATES AND APPROPRIATIONS OF PRIOR YEARS

Mr. EVINS. Page 9 shows a wide variety of peaks and valleys in your appropriation. There is not a consistent level here. You go from $27 million down to zero, and from zero to $10 million to $9 million. A lot of programs are funded at a rather consistent level. How do you account for these variations?

Dr. HUNTLEY. Well, it is my understanding that these variations were primarily the result of either a major interest in the civil defense program or a lack of interest.

MEDICAL STOCKPILE INVENTORIES

Mr. EVINS. What is your total investment in the emergency health activities?

Dr. HUNTLEY. Our national medical stockpile is now at $157 million.

Mr. EVINS. $157 million in the national emergency stockpile?

Dr. HUNTLEY. Yes.

Mr. EVINS. Would you supply for the record where these hospitals are located?

Dr. HUNTLEY. Yes.

Mr. EVINS. Supply a table for the record. I am sure it would be of interest.

(The information follows:)

EMERGENCY HEALTH ACTIVITIES

Packaged Disaster Hospitals and Number Affiliated With Community Hospitals as of Feb. 27, 1968

State	Packaged disaster hospitals	Affiliated with community hospitals	State	Packaged disaster hospitals	Affiliated with community hospitals
Alabama	51	10	Nebraska	23	5
Alaska	9		Nevada	18	
Arizona	18	4	New Hampshire	9	4
Arkansas	17	4	New Jersey	93	12
California	162	4	New Mexico	14	4
Colorado	49	5	New York	59	13
Connecticut	37	14	North Carolina	50	6
Delaware	8	1	North Dakota	15	2
District of Columbia	1		Ohio	115	39
Florida	52	31	Oklahoma	24	15
Georgia	50	1	Oregon	41	7
Hawaii	16		Pennsylvania	172	16
Idaho	15		Puerto Rico	8	
Illinois	68	25	Rhode Island	15	8
Indiana	39	2	South Carolina	41	10
Iowa	26	4	South Dakota	13	
Kansas	18	3	Tennessee	64	15
Kentucky	47	12	Texas	104	17
Louisiana	47	7	Utah	17	1
Maine	27	3	Vermont	13	3
Maryland	36	5	Virgin Islands	2	2
Massachusetts	81	14	Virginia	44	13
Michigan	72	12	Washington	36	6
Minnesota	61	6	West Virginia	16	1
Mississippi	33	6	Wisconsin	60	14
Missouri	65	10	Wyoming	11	1
Montana	11	1	Total	2,193	398

NOTES

In addition to the above 119 packaged disaster hospitals are in depots for refurbishment; 58 packaged disaster hospitals are in States for training purposes; 23 packaged disaster hospitals are in depots for disassembly; and 180 packaged disaster hospitals are in depots for prepositioning in local communities.

In addition to the 398 affiliation contracts that have been signed there are approximately 50 contracts that are in the final clearance process.

PACKAGED DISASTER HOSPITALS

Mr. EVINS. The increase in the number of natural disasters has required the use of the development of the packaged disaster hospital program. These are mobile units, aren't they?

Dr. HUNTLEY. Yes. The natural disaster hospital weighs about 5,000 pounds and it can be loaded in a 2-ton truck.

Mr. EVINS. They move wherever needed in case of flood, tornado, or other natural disaster. They have cots, blankets, medical supplies, and they can be rapidly moved?

Dr. HUNTLEY. Yes.

Mr. EVINS. The Red Cross moves in, the Corps of Engineers moves in, Small Business Arministration moves in and makes long-term, low-interest loans. How do you get these mobile trucks to move in?

Dr. HUNTLEY. These are under the direction of the community with which we have an agreement. As I mentioned, this may be the State or the local civil defense organization that provides the transportation.

Mr. EVINS. Who are most of the contracts with—the State public health service?

Dr. HUNTLEY. The contracts for custodianship and movement will be primarily with the State and local civil defense organizations.

The contract for the development of a mobile team and the utilization and staffing are mostly with medical societies and hospital staffs.

MEDICAL STOCKPILE JUSTIFICATION

Mr. EVINS. Place in the record pages 11 through 16.
(The pages follow:)

MEDICAL STOCKPILE

	1968 estimate		1969 estimate		Increase or decrease	
	Positions	Amount	Positions	Amount	Positions	Amount
Personnel compensation and benefits	41	$483,000	41	$500,000	.....	+$17,000
Other expenses	.....	6,936,640	.....	6,701,210	.....	−235,430
Total	41	7,419,640	41	7,201,210	.....	−218,430

SUMMARY OF ACTIVITIES

Activity	1968 estimate	1969 estimate	Increase or decrease
A. Acquisition of stocks	$2,995,640	$2,884,210	−$111,430
B. Inventory management	3,819,000	3,680,000	−139,000
C. Stockpile management	605,000	637,000	+32,000
Total	7,419,640	7,201,210	−218,430

The Division of Health Mobilization is responsible for managing the medical stockpile which, in terms of value of supplies geographically dispersed for use in emergency situations, involves a stewardship of assets exceeding $157,000,000.

The medical stockpile is a national medical supply reserve to assure the immediate availability of essential medical equipment and supplies for physicians and associated medical manpower to carry out effective medical care and life-saving services in the event of a disaster. The amounts and kinds of items are selected to offset critical deficiencies anticipated in the management of an immediate and massive medical care workload and the sustaining of essential care services for the postdisaster period until deficiencies can again to met through the restablishment of supply-demand balances.

Essential requirements for providing the continuity of survival health services for the disaster-affected civilian population are: (1) a stockpile of medical equipment and supplies to make available an immediate source in sufficient amounts to assume continuity of medical care when usual sources of supply are inadequate, cut off, or destroyed; (2) a stockpile containing hospital equipment and supplies which will augment the community hospital system by providing a fully equipped emergency hospital to be used in conjunction with the existing hospitals or as an alternate hospital facility; and (3) an expanded and widely dispersed stockpile inventory designed to offset long-range deficiencies of essential survival items until postdisaster production again may meet basic health services requirements.

The purpose and distribution of the national medical stockpile is directly related to the potential threat of a national emergency. The Federal position to this potential threat is the basis for determining the size and distribution of a national medical stockpile. Estimates of the medical care workload in a national emergency reveal that existing peacetime resources are inadequate to supply the immediate and continuing requirements for health manpower, medical supplies, and health facilities. The critical limiting factor is health manpower. The most effective utilization of surviving health manpower requires medical supplies and hospital beds strategically placed to provide medical care to the millions of surviving injured.

The postattack availability of medical supplies now in commercial inventories will provide for no more than a 2 weeks' supply of expendable items, such as anesthetics, antibiotics, bandages, et cetera, for the population requiring care. Unless adequate supplies are conveniently prepositioned and accessible, modern medical care would be unavailable for many months until production could again be resumed.

The present medical stockpile program requirements may be considered in two phases: Phase I, operational capability for the first 30 days; and phase II, back-up reserve for a period of 6 months' postattack. Program priority has been di-

rected to phase I, the immediate medical care requirement. Additional procurement for phase II, the long-range backup reserve supply will be deferred until phase I has been completed.

Phase I is concerned with immediate community support for lifesaving casualty care. Completion of this phase will provide a sufficient amount of medical supplies, equipment, and facilities to allow the surviving medical manpower to perform definitive medical care for millions of casualties over a period of approximately 30 days following a major disaster.

The packaged disaster hospital, an emergency 200-bed general medical and surgical hospital unit which is designed to be set up in an existing facility such as a school building, is an essential part of the medical stockpile program. These packaged disaster hospitals are being affiliated with existing community hospitals in strategic locations surrounding major metropolitan areas. By the end of 1969 it is anticipated that 700 contracts of affiliation will have been signed with community hospitals involving 700 packaged disaster hospitals. Under this arrangement the community hospital is responsible for staffing and developing an emergency operation plan tied in with the community which in turn provides storage, custody, and supporting services for operation. The current inventory contains 2,573 packaged disaster hospitals of which 750 were procured in 1962 and the remainder were purchased during the period of 1953–57. The inventory of each of these emergency hospitals is being updated and renovated in accordance with the recommendations in 1967 of an interagency committee.

The 2,573 packaged disaster hospitals, each containing 200 beds, will provide 514,600 beds with an estimated 30-day-operational capability. To provide sufficient facilities and supplies to enable all surviving physicians to function effectively in a postdisaster period, it is estimated that 485,400 additional beds or 2,427 packaged disaster hospitals will be required. This is above and beyond the estimates of potential beds that may be available in surviving community hospitals.

Another part of the current program to meet heavy disaster medical care workloads is the hospital reserve disaster inventory which provides the community hospital with an additional 30-day supply of essential emergency medical supplies. The added inventories furnished by the Federal medical stockpile program is in addition to the normal level of hospital inventories and will: (1) establish an immediate availability of resources to provide emergency medical care at community hospitals, (2) permit savings through the rotation of all items concerned and particularly short-shelf items (pharmaceuticals), and (3) offset the postattack shortages of critical medical supplies which may not be available from commercial supply sources due to attack losses. By the end of 1969 it is anticipated that 9 percent of the general medical and surgical beds in the United States will be so supplied with emergency inventories.

The increase in the number and severity of natural disasters has required the use of equipment and supplies from the medical stockpile, including the packaged disaster hospital, for natural disasters. Due to its size and the inclusion of items not essential for the particular type of medical care required in natural disasters, the packaged disaster hospital has not been satisfactory for this purpose. A natural disaster hospital, a more compact and mobile unit, has been developed by using certain components from the packaged disaster hospital to meet the requirements for specialized disaster contingencies. Through 1969, 25 of the natural disaster hospitals will be placed in areas most subject to natural disasters (tornadoes, hurricanes, et cetera).

Stockpiled material, classified as nonmission oriented, and valued at approximately $15 million, has been transferred to the military services and other government agencies through 1967. In addition, stockpiled material valued at approximately $10 million has been loaned or sold to the military services and other government agencies to meet urgent requirements.

Medical stockpile objectives will be accomplished through the following program areas:

A. Acquisition of stocks:

1968 estimate	$2,995,640
1969 estimate	2,884,210
Increase or decrease	—111,430

During 1968 an amount of $2,995,640, which includes $1 million brought forward from 1967, will be utilized to refurbish a portion of the packaged disaster hospitals and place hospital reserve disaster inventories on the shelves of community hospitals. The 1969 request of $2,884,210 will provide $2,011,000 to con-

tinue the program of refurbishing the existing packaged disaster hospitals and an amount of $873,210 will provide community hospitals with hospital reserve disaster inventories to meet the threat of heavy disaster medical workloads.

The consumable supply items in the hospital reserve disaster inventory units and the packaged disaster hospitals are identical and can be readily interchanged when necessary.

1. Hospital reserve disaster inventories for community hospitals:

1968 estimate	$1,400,000
1969 estimate	873,210
Increase or decrease	−526,790

During 1968 an amount of $1,400,000 will be utilized to continue the program of increasing the emergency medical supply inventories of community hospitals. This program is designed to improve the capability of the community hospital to manage heavy disaster medical care workloads for extensive periods of time without delay or dependence on commercial supply channels. In a postnuclear attack environment or major natural disaster, normal sources of supply will not be available at the time of greatest need due to destruction or disruption of distribution systems. Current hospital practices involve low level and rapid inventory turnover due to the amount of capital outlay required. Consequently, hospitals operate on the inventory from suppliers through frequent deliveries and maintain inventory levels consistent with requirements of the current patient population and available funds.

To date the program has acquired consumable materials to supply 70,000 beds or approximately 700 community hospitals with emergency inventories.

An amount of $873,210, a decrease of $526,790 from 1968, is requested for 1969 to permit the acquisition of additional emergency inventories to supply approximately 21,000 hospital beds with essential medical materials to provide for disaster situations.

2. Replacement of deteriorated materials and refurbishment of packaged disaster hospitals:

1968 estimate	$1,595,640
1969 estimate	2,011,000
Increase or decrease	+415,360

During 1968, an amount of $1,595,640 will be utilized to continue the program of refurbishing and updating approximately 700 of the 1962 model packaged disaster hospitals. To achieve greater economy and utilization of the existing stockpile, inventories have been withdrawn from reserve depot stocks and combined with new procurement to update and refurbish the existing packaged disaster hospitals.

In accordance with current program policies the packaged disaster hospitals will be refurbished and updated with new materials to provide for a 30-day operational capability. The refurbished hospital will be returned to communities and programed in affiliation with community hospitals as part of their overall disaster management and preparedness capability. Such operational affiliation provides the most logical and natural environment for effective utilization by communities to manage the medical care load resulting from disasters. The professional staff and supporting services of community hospitals automatically provide the necessary and ready source of services for rapid expansion of emergency medical care services. The affiliated packaged disaster hospital, on site, will provide an immediately available and positively identified emergency resource for hospital expansion complete with critical supplies to permit the full emergency implementation of community disaster medical care services which could not otherwise be accomplished when normal supply-distribution channels are interrupted.

An amount of $2,011,000, an increase of $415,360 over 1968, is requested in 1969 to provide for the refurbishment and updating of approximately 200 packaged disaster hospitals at an average cost of $10,000 per hospital and will additionally provide for the procurement of new materials to assemble 25 natural disaster hospitals. The 25 natural disaster hospitals (costing approximately $3,600 each) will be assembled into 50-bed packaged units by withdrawing $79,000 worth of existing depot stocks of supplies and by the procurement of new materials estimated at $11,000.

The natural disaster hospitals will be deployed to areas with a high probability of experiencing disasters, e.g., the Atlantic and gulf coast hurricane belts, Mississippi flood plain areas, Midwest tornado prone areas, California and Alaska earthquake and flood-prone areas, and metropolitan areas subject to danger because of proximity of bulk transport of noxious, flammable, or explosive substances.

The schedule of components of the 50-bed natural disaster hospital were selected from the standard list of the 200-bed packaged disaster hospital. Although these materials will be prepositioned in or near areas which have a high probability of natural or other local disasters, this unit is designed so that it could be dispatched quickly to other disaster scenes. This will augment nuclear preparedness and also provide flexibility to meet more immediate needs. Also under threat of disaster, it could easily be moved to a protected site or point of critical need.

Generally, the planned capacity for this unit is for the sorting and management of up to 300 casualties. Specifically, the resources were selected for stabilization and holding up to 100 nonambulatory casualties prior to evacuation, 100 ambulatory casualties needing stabilization prior to evacuation for definitive medical care, and 100 ambulatory casualties who can be treated and released.

This unit provides the traditional assortment of emergency supplies and equipment plus those items needed to provide for the administration of emergency medications and to provide for lifesaving surgical capability in the field. This complement of items is judged to be desirable where on-site first aid is required to offset the effects on patients when delay up to 24 hours in transfer of patients to an on-going medical facility is likely to be experienced.

REFURBISHMENT OF PACKAGED DISASTER HOSPITALS

Mr. EVINS. You have $2 million, an increase of $415,000, to provide for the refurbishment and updating of 200 of the hospitals with a cost of $10,000 per hospital. This is just an extension of your ongoing program?

Dr. HUNTLEY. Yes, this is an extension of the ongoing program.

DISPOSITION OF THE MEDICAL STOCKPILE INVENTORIES

Mr. EVINS. What is done with deteriorated materials?

Dr. HUNTLEY. This fiscal year we have been able to rotate approximately $1.5 million of materials with other Government agencies. We have also excessed some $800,000 this fiscal year. Over the past several years, about $10 million has been rotated and about $15 million in materials has been excess.

Mr. EVINS. About $10 million has been rotated and about $15 million has been declared excess?

Dr. HUNTLEY. Yes, it has.

Mr. EVINS. Can you do anything about that, Doctor?

Dr. HUNTLEY. We think we are improving the situation as evidenced by our record thus far this year.

Mr. EVINS. This is over the years?

Dr. HUNTLEY. Yes. I think it must be recalled that much of the stockpiled supplies and materials is now 15 years old or older.

COST OF PAY ACTS

Mr. EVINS. How much of your Pay Act were you able to absorb last year?

Dr. HUNTLEY. We absorbed all of it last year.

Mr. EVINS. What do you propose to do in 1969 with the Pay Act increase?

Dr. HUNTLEY. We are absorbing it in the budget request. The total cost of the increase in fiscal year 1968 was $133,000. The total cost in fiscal year 1969 will be $162,000.

Mr. EVINS. You say on page 18 an increase of $261,000 is requested for 1969 to provide $11,000 for annualization of pay raises and $250,000 for establishment of inspection teams.

Dr. HUNTLEY. Yes.

Mr. EVINS. Does this includes the pay raise for the inspection team?

Dr. HUNTLEY. No. This is the pay raise that is required for depot operations.

Mr. EVINS. How much is the total pay raise for 1969 of this phase of your Public Health Service program?

Dr. HUNTLEY. Do you mean only the depot operations, or the total?

Mr. EVINS. The appropriation for which you are testifying today.

Dr. HUNTLEY. $162,000 for 1969.

Mr. EVINS. This is the pay raise increase?

Dr. HUNTLEY. Yes.

Mr. EVINS. And you will absorb this amount?

Dr. HUNTLEY. Within our budget, yes.

ESTABLISHMENT OF INSPECTION TEAMS

Mr. BOLAND. The $250,000 is for the establishment of inspection teams. Do you have inspection teams now?

Dr. HUNTLEY. We do not at the present have field inspection teams.

Mr. BOLAND. Why does inspection come so late? You have been at this for a number of years. With this money you are going to establish 11 inspection teams for accommodation of Public Health Service and GSA. Have you not been inspecting this material before?

Dr. HUNTLEY. As I mentioned earlier, there had been an inspection program up until a little over 4 years ago.

Mr. BOLAND. Are you going to maintain these teams constantly now annually, or is this just a one-shot operation?

Dr. HUNTLEY. It is our intention to maintain them on an annual basis.

Mr. BOLAND. You are going to have 11 inspection teams and these inspection teams are on-going to be able to inspect about 275 hospitals?

Dr. HUNTLEY. Yes.

Mr. BOLAND. And you have a total of, how many did you say?

Dr. HUNTLEY. We have a total of about 2,550 packaged disaster hospitals.

Mr. BOLAND. So next year this team will be inspecting maybe 275 different ones?

Dr. HUNTLEY. 275 different ones, yes.

Mr. BOLAND. So actually, you are going to maintain these teams now on an annual basis?

Dr. HUNTLEY. That is our intention, yes.

REGIONAL AND STATE ASSIGNMENTS

Mr. EVINS. On page 21 you have 91 jobs in regional and State assignments. You are asking for an increase of $36,000. Where are these people located?

Dr. HUNTLEY. They are located on assignment to State health agencies, to a number of the major metropolitan areas, and to regional offices.

Mr. EVINS. Where are the regional offices?

Dr. HUNTLEY. There are nine regional offices of the Department.

Mr. EVINS. They are in your regional offices and some metropolitan areas?

Dr. HUNTLEY. Some metropolitan areas, but primarily to State health agencies.

Mr. EVINS. Are they given specific assignment on these jobs?

Dr. HUNTLEY. Yes. In most of the States these are the men who are primarily responsible for the health mobilization program. In some States, the State itself has supplied personnel and these individuals assist in developing programs.

AVERAGE GRADES

Mr. EVINS. What is the grade of your 175 people generally?

Dr. HUNTLEY. The average grade of all of our people is grade 11. I think our field staff will average just a little higher than this.

EMERGENCY HEALTH TRAINING AND COMMUNITY PREPAREDNESS ACTIVITIES

Mr. EVINS. We will place pages 20 through 26 in the record.

(The pages follow:)

EMERGENCY HEALTH TRAINING AND COMMUNITY PREPAREDNESS

	1968 estimate		1969 estimate		Increase or decrease	
	Positions	Amount	Positions	Amount	Positions	Amount
Personnel compensation and benefits:						
Regional and State assignments	91	$1,163,000	91	$1,199,000	.....	+$36,000
Disaster services methods	12	137,000	12	142,000	.....	+5,000
Program management and technical services	31	459,000	31	470,000	.....	+11,000
Total, personnel compensation and benefits	134	1,759,000	134	1,811,000	.....	+52,000
Other expenses	.....	821,360	.....	962,000	.....	+140,640
Total	134	2,580,360	134	2,773,000	.....	+192,640

SUMMARY OF ACTIVITIES

Activity	1968 estimate	1969 estimate	Increase or decrease
A. Regional and State assignments	$1,307,000	$1,343,000	+$36,000
B. Disaster services methods	560,360	706,000	+145,640
C. Program management and technical services	623,000	634,000	+11,000
D. Natural disaster contingency fund	90,000	90,000	.....
Total	2,580,360	2,773,000	+192,640

In the event of an enemy attack or major peacetime natural disaster, operational programs and plans must be in readiness to enable States and communities to successfully provide emergency health services for the civilian population. Medical care facilities will be severely taxed to provide an accelerated medical care requirement for the surviving population particularly when associated with an anticipated reduction of health resources due to destruction or disruption of supply systems. An emergency health readiness program therefore

must become an integral part of community planning. Significant progress has been made in the development and the implementation of effective emergency health readiness programs. Further achievements will be attained through the following program areas.

	1968 estimate		1969 estimate		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
A. Regional and State assignments	91	$1,307,000	91	$1,343,000	.....	+$36,000

Professional health personnel providing direct technical advice and assistance to States and local communities is the most expedient means for achieving emergency health preparedness nationwide. The assignment of this professional health staff has significantly benefited Federal, State and local health officials in responding to the need, development, and carrying out of emergency health preparedness programs.

During 1968, professional personnel assigned to DHEW regional offices, State health departments and to metropolitan areas provided the following services: (1) Assisted States and communities in meeting civilian health requirements for the period immediately following floods, hurricanes, tornadoes and other natural disasters by organizing and making provisions for required medical supplies, equipment and technical manpower; (2) arranged the affiliation of packaged disaster hospitals with on-going community hospitals; assisted hospital personnel in developing and testing packaged disaster hospital utilization plans and comprehensive hospital disaster plans; (3) motivated and assisted hospitals to place an approximate 30-day reserve disaster inventory within their facilities, established rotation plans for short-life medical items, and monitored the effectiveness of the rotation plan in the program; (4) gave program assistance and guidance to States in extensive training activities aimed at increasing community emergency health preparedness capability, including medical self-help, disaster functions of health professional personnel, packaged disaster hospital utilization and community emergency health service operations; and (5) provided technical guidance for revision and updating State emergency health and health resources management plans for maximum utilization of health resources under disaster conditions, assisted in developing and testing model community emergency plans, and assisted in the establishment of health resources inventories.

An increase of $36,000 is requested for 1969 to provide $22,000 for mandatory within-grade pay increases, $4,000 is required for one extra day of pay above the stated annual rate and $10,000 is requested for annualization of increased pay costs.

	1968 estimate		1969 estimate		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
B. Disaster services methods	12	$560,360	12	$706,000	.....	+$145,640

The application of disaster services methods to national security and disaster preparedness requires the continuous evaluation of training and education programs. Health and medical leaders, elected officials, hospital staffs, other health facility and resource personnel, and the public must be afforded the opportunity to acquire knowledge and skills that will enable them to take lifesaving action in accordance with National, State, and community disaster management efforts.

Emergency health preparedness training and education programs were evaluated by a non-Government agency staffed by experts in the fields of training, education, and social behavior. Their recommendations, in addition to guidance received from Interagency Task Force, professional organizations, including the American Medical Association, American Hospital Association, American Nursing Association, and Public Health Association, now serve as a planning base. Existing training and education goals were updated to reflect recommendations made. Disaster management requirements were modified on the basis of actual disaster experience determined by staff and consultant personnel.

Consistent with the national responsibility of providing an adequate standard of health services regardless of the type or magnitude of the disaster environment, the objective is to design and implement education, training, and orientation programs that provide disaster health services to the greatest number of people. Disaster training and educational programs are designed to assist the medical and health practitioner in determining how his professional knowledge and skills can best be used in a disaster. This requires involvement with the day-to-day activities of the professional, his technical support personnel, operational facilities, professional organizations, and schools.

The primary approaches which are being employed to achieve national goals are accomplished through the design and implementation of training and educational disaster programs which will effectively reduce the potential number of disaster victims requiring medical care and health services. These programs are being implemented through lectures, orientation programs, seminars, and workshops which are being conducted for National, regional, State, and local professional health personnel and are concerned with techniques for upgrading the Nation's disaster survival status to limit the disaster casualty load.

Federal, State, and local health and medical personnel receive training in the technical aspects of chemical and biological warfare defense; that is, recognition, detection, control, and decontamination, which includes the accidental release of toxic agents during a natural disaster or while they are in transit or storage.

The medical self-help training program has proved to be an excellent and effective means of reducing the number of disaster victims who would present themselves for professional medical care. This training program is composed of an 11-subject course devoted to first aid and survival techniques which prepares the general public to care for its own medical and health needs during an emergency or disaster when professional medical assistance will not be available. The goal is to train one member of each family, or approximately 50 million Americans. By the end of fiscal year 1968, it is anticipated that over 7 million people will have completed the course. Students receive free instruction through the voluntary efforts of communities, industry, business, local governments, medical and educational institutions, and various agencies. Funds for the medical self-help training program to procure supplies and achieve State assistance are transferred from the Department of Defense, Office of Civil Defense to the Department of Health, Education, and Welfare. An amount of $1,200,000 is available for this program in 1968 and $500,000 is anticipated for 1969.

Another approach to achieve national goals is to assist medical and health authorities at all levels of Government to provide the best possible emergency medical care for disaster victims. The following programs have been prepared to assist hospital authorities, health department personnel, physicians, and other allied health workers:

Emergency health services training prepares health authorities, elected officials, including representatives of governmental agencies, industry, civic and volunteer groups, in the task of establishing a community emergency health service plan for the efficient use of all available health resources during disaster situations.

Emergency health services training includes the training of key hospital personnel, and ancillary and volunteer personnel, for the efficient and proper utilization of the packaged disaster hospital affiliated with the community hospital. The training of key health personnel to effectively utilize the available medical resources, particularly the packaged disaster hospital, will enhance the communities capabilities to manage heavy medical care workloads during major disaster situations.

The mass casualty care program acquaints staff physicians with the effective use of packaged disaster hospitals and the management aspects of medical sorting (or triage) of mass civilian casaulties and assists the physician in determining the effect of major disasters on normal doctor-patient relationships. Professions training studies are currently being conducted with selected professional schools to develop methods of including disaster training content in their ongoing curriculums. Materials developed will serve as a model for all schools of a like profession. Our goal is to incorporate disaster content in the curriculums of the approximately 1,450 health professional schools (medical, dental, nursing, pharmacy, veterinary medicine, hospital administration) in the Nation. In-service training seminars, workshops, and conferences are presented to Government personnel to update their knowledge and skills in keeping with revisions made in national security and disaster preparedness policy. They may serve as advisers to hospital authorities, community and governmental agency leaders,

and professional organizations, to assist them with their disaster preparedness programs.

An increase of $145,640 is requested for 1969 to provide for: (1) Establishment of a program to support training personnel in state health departments, $100,000. The primary mission will be to work with community hopsital staffs, health professions organizations, civil defense and volunteer disaster services organizations in the implementation of the disaster services methods programs. The American Medical and Hospital Associations stressed the dire need for establishing disaster preparedness training competencies within the state health departments. Individuals and/or teams of professional health instructors would be assigned the task of implementing disaster training and educational programs in a number of state health departments serving the Nation's major standard metropolitan statistical areas. Professional health instructors would present packaged disaster hospital training programs to the staffs of an estimated 250 community hospitals affiliated with the packaged disaster hospital program. They would stimulate community hospital authorities and professional organizations to assume a leadership role in the development of community and metropolitan area emergency health service plans, mutual aid agreements, and assist with evaluating the resultant plans by initiating disaster tests and drills. In addition, they would present disaster preparedness programs to physicians and allied health staffs at approximately 250 health and medical care institutions, designed to assist in adjusting ongoing operational methods to meet mass casualty workloads: (2) the development of specialized training aids and materials for community training programs, $40,640; (3) within-grade salary increases, $2,000; (4) one extra day of pay above the stated annual rate, $1,000; and (5) annualization of increased pay costs, $2,000.

	1968 estimate		1969 estimate		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
C. Program management and technical services.....	31	$623,000	31	$634,000	.....	+$11,000

This activity has responsibility for total program control, policy, formulation, program direction, coordination and management, information activities, etc., and incorporates the following major program areas: (1) Maintaining close working relationships and liaison with professional organizations and government agencies concerning disaster health services (e.g., American Medical Association, American Hospital Association, American Nurses Association, American National Red Cross, Veterans' Administration, General Services Administration, Department of Defense, and Office of Emergency Planning); (2) maintaining surveillance on the status of national readiness to provide emergency health services and resources, and evaluating the impact of disasters upon the organization and delivery of essential health services; (3) developing public awareness and acceptance of the need for disaster preparedness, and stimulating the recognition of disaster responsibilities of those professions and support organizations whose services are essential to survival and postdisaster recovery; (4) developing and promulgating standards and guidance for the provision of emergency health services and the utilization of health resources during disasters; (5) developing and maintaining agency contingency plans and systems for activation during limited or general war emergencies; (6) coordinating the provision of agency assistance to State and local health agencies during disasters; (7) maintaining an integrated and output-oriented system of programming, planning, and budgeting; (8) evaluating and providing data on emergency requirements for health resources; estimating the postattack deficiency between supplies and requirements; and initiating programs to overcome health resource deficiencies; (9) assisting the National Resources Analysis Center in the preparation of calculations on damage assessment to health resources following various potential enemy attack assumptions through the conduct of vulnerability studies to show survival capability and protection requirements, and maintaining procedures for the dissemination, after actual attack, of damage assessment summaries and estimates; (10) administering and monitoring research work on emergency health preparedness; (11) preparing community emergency water supply plans which will provide for alternate sources of water, stockpiling of a 30-day supply of

chemical and other essential items for water treatment and distribution, and for training of operating personnel in appropriate emergency procedures to assure the availability of usable public water supplies for essential community emergency purposes; and (12) performing day-to-day coordination and guidance of regional field activities to assure progress toward accomplishment of program objectives.

An increase of $11,000 is requested in 1969 to provide for within-grade salary increases, $6,000; 1 extra day of pay above the stated annual rate, $1,000; and $4,000 for annualization of increased pay costs.

D. Natural disaster contingency fund:

1968 estimate	$90,000
1969 estimate	90,000
Increase or decrease	0

The estimate is entirely exclusive of the President's natural disaster fund (Public Law 875) as administered by the Office of Emergency Planning. In order to fulfill the responsibilities of the Federal Government to the States and communities in time of need, the public health service must immediately commit medical resources to disaster areas that are not officially declared a major disaster by the Office of Emergency Planning and accordingly the costs incurred are not subject to reimbursement.

This request will provide the Public Health Service with funds to enable emergency health staff to immediately respond to State requests to provide assistance to local communities in disaster areas where normal daily health practices are disrupted or communities are isolated from medical care services or facilities. Among the types of assistance provided to communities in disaster areas are provision for methods of emergency supply of potable water and establishment of emergency sanitation procedures, application of preventive epidemiological procedures, utilization and operation of an emergency hospital and provision for medical personnel and supplies to treat the sick and injured.

The request of $90,000 for 1969 will provide for a continuation of this program at the 1968 level.

PROGRAM MANAGEMENT AND TECHNICAL SERVICES

Mr. EVINS. We will take a look at 24. You have 31 jobs in management and technical services. It is just a little heavy on management, is it not? You are requesting $634,000, an increase of $11,000 in management.

Dr. HUNTLEY. Yes. It has been our experience, sir, that each of these personnel, which includes myself, have had jobs to do that many times they have had difficulty in accomplishing because of the amount of work that each of them have been assigned.

If you will note on page 25, this page specifies the actual work of these individuals.

Mr. EVINS. Here is what it says:

"Maintaining close working relationships and liaison with professional organizations and Government agencies concerning disaster health services."

No. 2, you maintain surveillance on the status of national readiness to provide emergency health services.

No. 3, you develop public awareness.

No. 4, you develop and promulgate standards.

No. 5, you develop and maintain agency contingency plans.

No. 6, you coordinate the provisions of agency assistance to State and local health agencies during disasters.

No. 7, you maintain an integrated and output-oriented system of programing.

Evaluating and providing data on emergency requirements. You do not know what the emergencies are until they develop.

Assisting the National Resources Analysis Center. That is OEP; is it not?

Dr. HUNTLEY. Yes, sir; that is in the Office of Emergency Planning.

Mr. EVINS. No. 10, administering and monitoring research work and No. 11, preparing community emergency water supplies.

I think some other agencies are doing that too, are they not?

Dr. HUNTLEY. No, sir, not in terms of the emergency water supply in a national emergency.

Mr. EVINS. $634,000, divided by 31, is about $20,400 per person.

Dr. HUNTLEY. The $634,000 includes other things besides salaries. It includes travel and other objects of expense.

Mr. EVINS. They have to have a little leave and travel.

Doctor, if they all worked as hard as you and were as dedicated and competent as you, it would be worth the money.

I think you have made a fine statement and we will take the matter of your budget under consideration.

NATURAL DISASTER CONTINGENCY FUND

Mr. BOLAND. On the national disaster fund, what is the unobligated balance?

Dr. HUNTLEY. This fund just became available to us in terms of utilization some 3 weeks ago.

Mr. BOLAND. Was that funded for $90,000 in 1968?

Dr. HUNTLEY. It was funded for $90,000 in 1968, yes.

Mr. EVINS. Mr. Talcott?

Mr. TALCOTT. No questions

Mr. EVINS. Thank you, Doctor; we wish you and your staff good luck in your mission.

Dr. HUNTLEY. Thank you, sir.

WEDNESDAY, FEBRUARY 28, 1968.

GENERAL SERVICES ADMINISTRATION

WITNESSES

AGENCYWIDE MATTERS

LAWSON B. KNOTT, JR., ADMINISTRATOR
JOE E. MOODY, DEPUTY ADMINISTRATOR
ROBERT T. GRIFFIN, ASSISTANT ADMINISTRATOR
W. L. JOHNSON, JR., ASSISTANT ADMINISTRATOR FOR ADMINISTRATION
HARRY R. VAN CLEVE, GENERAL COUNSEL
WILLIAM A. BUTTS, DIRECTOR OF BUDGET
CLIFFORD L. PORTER, DEPUTY DIRECTOR OF BUDGET
JOHN C. AUKWARD, DIRECTOR, PRODUCTION AND CONTROL DIVISION
HENRY G. PUPPA, DIRECTOR OF PROGRAM AND POLICY PLANNING STAFF

PUBLIC BUILDINGS SERVICE

WILLIAM A. SCHMIDT, COMMISSIONER
ROBERT B. FOSTER, JR., DEPUTY COMMISSIONER
CARL E. RANTZOW, ASSISTANT COMMISSIONER, OFFICE OF BUILDINGS MANAGEMENT
LEONARD L. HUNTER, ASSISTANT COMMISSIONER, OFFICE OF DESIGN
JOHN W. CHAPMAN, JR., ASSISTANT COMMISSIONER, OFFICE OF SPACE MANAGEMENT
LOY M. SHIPP, JR., DEPUTY ASSISTANT COMMISSIONER, OFFICE OF SPACE MANAGEMENT
C. AUSTIN HEFFERNAN, ADMINISTRATIVE OFFICER
DONALD F. LAUDENSCHLAGER, DIRECTOR, PUBLIC BUILDINGS PROGRAM DIVISION, OFFICE OF BUDGET

FEDERAL SUPPLY SERVICE

H. A. ABERSFELLER, COMMISSIONER
LEWIS E. SPANGLER, DEPUTY COMMISSIONER
ISAAC E. FRIEDLANDER, DIRECTOR FOR PROGRAM MANAGEMENT
JOHN C. MOUAT, DIRECTOR, FEDERAL SUPPLY, TRANSPORTATION AND COMMUNICATIONS DIVISION, OFFICE OF BUDGET

NATIONAL ARCHIVES AND RECORDS SERVICE

DR. ROBERT H. BAHMER, ARCHIVIST
DR. JAMES B. RHOADS, DEPUTY ARCHIVIST
OLIVER W. HOLMES, EXECUTIVE DIRECTOR, NATIONAL HISTORICAL PUBLICATIONS COMMISSION
WALTER ROBERTSON, JR., ASSISTANT ARCHIVIST OF ADMINISTRATION AND TECHNICAL SERVICES
H. V. LLEWELLYN, DIRECTOR, STAFF AND OTHER PROGRAMS DIVISION, OFFICE OF BUDGET

TRANSPORTATION AND COMMUNICATIONS SERVICE

DOUGLAS E. WILLIAMS, COMMISSIONER
ROBERT B. CONRAD, DEPUTY COMMISSIONER
ANDREW A. HORNER, DIRECTOR OF PROGRAM MANAGEMENT
WILLIAM H. MILLER, EXECUTIVE OFFICER

PROPERTY MANAGEMENT AND DISPOSAL SERVICE

JOHN G. HARLAN, JR., COMMISSIONER
WALTER C. MORELAND, DEPUTY COMMISSIONER
JAMES J. ROMEO, ASSISTANT COMMISSIONER, OFFICE OF RESEARCH AND PLANNING
E. R. SULLIVAN, EXECUTIVE OFFICER

Mr. EVINS. The committee will come to order.

We have with us this morning our friends from the GSA, headed by Mr. Lawson B. Knott, able Administrator. He has a distinguished staff with him.

He is accompanied by Mr. Joe E. Moody, Deputy Administrator; Robert T. Griffin, Assistant Administrator; W. L. Johnson, Jr., Assistant Administrator for Administration; Harry R. Van Cleve, General Counsel; William A. Butts, Director of Budget; Clifford L. Porter, Deputy Director of Budget; John C. Aukward, Director, Production and Control Division; Henry G. Puppa, Director of Program and Policy Planning Staff.

From the Public Building 5 Service we have William A. Schmidt, Commissioner, accompanied by Robert B. Foster, Jr., Deputy Commissioner; Carl E. Rantzow, Assistant Commissioner, Office of Buildings Management; Leonard L. Hunter, Assistant Commissioner, Office of Design; John W. Chapman, Jr., Assistant Commissioner, Office of Space Management; Loy M. Shipp, Jr., Deputy Assistant Commissioner, Office of Space Management; C. Austin Heffernan, Administrative Officer and Donald F. Laudenschlager, Director, Public Buildings Program Division, Office of Budget.

We have here with us also from the Federal Supply Service Mr. H. A. Abersfeller, Commissioner; accompanied by Lewis E. Spangler, Deputy Commissioner; Isaac E. Friedlander, Director for Program Management; and John C. Mouat, Director, Federal Supply, Transportation and Communications Division, Office of Budget.

From the National Archives and Records Service we have Dr. Robert H. Bahmer, Archivist of the United States, accompanied by Dr. James B. Rhoads, Deputy Archivist; Oliver W. Holmes, Executive Director, National Historical Publications Commission; Walter Robertson, Jr., Assistant Archivist of Administration and Technical Services; and H. V. Llewellyn, Director, Staff and Other Programs Division, Office of Budget.

From the Transportation and Communications Service we have Douglas E. Williams, Commissioner; accompanied by Robert B. Conrad, Deputy Commissioner; Andrew A. Horner, Director of Program Management; and William H. Miller, Executive Officer.

From the Property Management and Disposal Service we have John G. Harlan, Jr., Commissioner; accompanied by Walter C. Moreland, Deputy Commissioner; James J. Romeo, Assistant Commissioner,

Office of Research and Planning; and E. R. Sullivan, Executive Officer.

Mr. Administrator, we are glad to see you look so well. We have looked over your budget and it is well prepared. You have lots of new laws and more responsibilities, Mr. Administrator. The committee will be glad to hear from you. You may proceed as you wish.

General Statement

Mr. Knott. It is a pleasure as always to appear before this committee to discuss the GSA portion of the President's fiscal year 1969 budget. I am pleased to have with me today the same program directors and assistants who accompanied me last year and to report that their dedicated effort and support have been a significant factor in the progress we have made in the past year in extending the scope and level of GSA services while holding the line on expenditures.

REQUEST FOR 1969

This $510.3 million budget request is the smallest submitted for GSA in the last 9 years. The fact that the budget does not include any new funds for construction starts for public buildings in fiscal year 1969 is, of course, a major factor. Also, funds requested for acquisition of sites, planning, and design of public buildings amount to just over one-half that appropriated last year and no additional capital has been requested this year for the ADP revolving fund.

OPERATING EXPENSES, PBS

The sum of our request for fiscal year 1969 is, then, $66.2 million below the comparable amount available in 1968. Our largest request, "Operating expenses, Public Buildings Service," is $6.9 million above last year. This increase is needed, primarily, to cover the cost of management and operation of 3.7 million average square feet of space in new Federal buildings now scheduled for occupancy.

REPAIR AND IMPROVEMENT

The appropriation request for "Repair and improvement" is held at the 1968 level in spite of a steadily increasing backlog of needed major repair work. We estimate that this backlog will stand at $448.1 million at the end of fiscal year 1969, an increase of $68.3 million over the 1968 fiscal year end level. Expenditures at this level are below the minimum essential for preservation and improvement of the Government buildings for which GSA has repair and improvement responsibility and it is our hope that in the years ahead it will be possible to increase the amount of this request.

SITES AND EXPENSES

The amount for "Sites and expenses" for public buildings projects is limited in this request to $11 million for 11 urgently needed authorized projects, 10 of which are outside the metropolitan area of

Washington, D.C. Although no funds are requested for new construction, we do plan to award during the year six construction contracts using funds appropriated by the Congress in prior years. The schedule for others will be advanced if overall fiscal conditions warrant such action.

OPERATING EXPENSES, FSS

The increase of $4.8 million in "Operating expenses, Federal Supply Service," is necessary to handle procurement and management of supply and equipment items in common use by all agencies of the Government, the volume of which continues to increase, particularly by the Department of Defense. Total procurement volume in fiscal year 1969 is estimated to increase $129.2 million over 1968. This request also includes funds for increased emphasis on automated data management activities assigned to GSA by Public Law 89–306.

OPERATING EXPENSES, NARS

Increased volumes of records administered and reference services rendered, including military records at the National Personnel Records Center in St. Louis and Internal Revenue Service business tax returns, account for substantially all of the increase requested for archives and records activities. This service, under Dr. Bahmer's distinguished leadership, is making an outstanding contribution to the service record of GSA among other Federal agencies in addition to its enrichment of the cultural and educational well-being of all Americans through its knowledgeable selection, preservation, publication, and administration of records and other historical materials.

OPERATING EXPENSES, TCS

The increase of less than one-half million dollars in Transportation and Communications is almost entirely to provide increased emphasis in management and technical assistance to all civilian agencies in the communications field, and to provide for systems engineering studies needed to improve the operation of the Federal Telecommunications System.

OPERATING EXPENSES, PMDS

An increase of $2.5 million in "Property Management and Disposal" activities will provide for the purchase of the Hammond, Ind., storage facility and to defray the increased charges by the Department of Defense for providing storage space and disposal handling services to GSA.

ADMINISTRATIVE OPERATIONS

We are also requesting an increase in the limitation over the 1968 comparable amount for the "Administrative Operations Fund" of just under $1 million needed to provide for workload increases and added emphasis on audit and investigative functions required for the proper protection of both the integrity an investment of the U.S. Government in all fields of GSA's responsibility.

EMPLOYMENT INCREASE FOR OPERATION OF GOVERNMENT-OWNED SPACE

The budget for GSA reflects a total man-year increase in 1969 over 1968 of just under 1,100. Almost 600 man-years of this increase are needed to operate the additional Government-owned space I mentioned earlier. We are already spread too thin in our building maintenance, cleaning and protection forces despite improved employee productivity and improved work methods and procedures. Since 1960 the average square feet of space managed by GSA has increased 64 percent, whereas our average employment in this activity during the same period has risen only 28 percent. Furthermore, at the end of December 1967 GSA had 656 projects for new buildings or alteration projects of various sizes and for many purposes costing $901.7 million under design and it had 343 such projects costing $512.7 million under construction.

FEDERAL SUPPLY, TELECOMMUNICATIONS, AND INTERAGENCY MOTOR POOL EMPLOYMENT

Employment increase in 1969 for the Federal Supply Service is 350, about half of which is needed to handle increased export packing service for overseas shipments to Southeast Asia for the Department of Defense. An employment increase of 144 is needed to handle the expanding operations of the Federal Telecommunications System and interagency motor pools as a result of increases in the volume of demand for these services by other Government agencies.

CALL TO GSA FOR SERVICES

It is our experience that in times of budgetary stringency many agencies call on GSA for services it is qualified to render that they would in times of greater budgetary freedom elect to perform for themselves.

In conclusion I want to assure you that we will continue to effectively and efficiently administer our programs so as to keep our dollar and employment needs at minimum levels but at the same time assure that our essential programs are not seriously disrupted or impaired.

Thank you, Mr. Chairman.

Mr. EVINS. Very good, Mr. Administrator, it was very much to the point.

Mr. Administrator, I notice page 5 of your statement refers to the workload and public buildings construction.

Mr. KNOTT. Yes, sir.

Mr. EVINS. You state at the end of December 1967 GSA had 656 projects for new buildings or alteration projects.

Mr. KNOTT. Yes, sir; 656 projects under design.

Mr. EVINS. Some of these are for alteration and repair. There are not that many new buildings, are there?

Mr. KNOTT. Not that many new buildings, no. There are a mixture of alteration projects and new construction.

Mr. EVINS. The total is 656?

Mr. KNOTT. Yes, sir; both new construction, and repair and improvements projects under design.

CONSTRUCTION PROJECTS

Mr. EVINS. When the Vietnam war is over we will probably give more attention to domestic matters, but how many requests for projects have you got on the shelf as of now?

Mr. KNOTT. We have cut down on the number of continuing surveys of needs which we are directed to make under the Public Buildings Act. We did make three or four hundred surveys around the country last year and we have on a priority basis developed some projects that we are about ready to submit to the Public Works Committee for authorization with no commitment as to funding.

Mr. EVINS. How many of this 656 represent new projects?

Mr. KNOTT. Of that number there were 63 new construction projects and 153 repair and alteration projects for other agencies. We do as much work for other agencies on a reimbursement basis as we do on our own projects. For GSA we had 55 construction projects and 385 alteration projects under design.

Mr. EVINS. 538 alterations?

Mr. KNOTT. Yes, sir; under design.

Mr. EVINS. Then you indicated 343.

Mr. KNOTT. Actually under construction.

Mr. EVINS. Under construction?

Mr. KNOTT. Right, sir. Now of that number, 125 are GSA projects, 47 new construction projects, and 78 repair and improvement projects. Those are actually underway now. For other agencies there is a total of 218, of which 32 are new construction projects.

POST OFFICE CONSTRUCTION

Mr. EVINS. Is the Post Office Department building their own post office buildings now? Do you let them go out, contract by themselves under a lease basis, or how are you cooperating with the Post Office Department at the present time?

Mr. KNOTT. The Post Office Department has authority delegated by GSA to construct some 14 Government-owned mail handling facilities. These are mechanized mail handling facilities which were delegated to them for construction in December of 1966.

Mr. EVINS. We know there is a special act passed by Congress allowing the Post Office Department to build its own buildings.

Does the Post Office Department operate entirely with its own force, or does it utilize the good offices and capabilities of GSA?

Mr. KNOTT. No, sir; not on these projects. Many of the—some 50 odd projects that I spoke about are new projects that have just been cleared by the Bureau of the Budget are a combination of post office, courthouse, and Federal office buildings. These are facilities that serve the downtown community, where the community is not sufficiently large to require a separate, mechanized mail handling facility for an industrial-type operation toward which the Post Office has been moving in major cities in recent years.

CONSTRUCTION OF OTHER THAN POSTAL FACILITIES

Mr. EVINS. Well, if other than post office facilities are needed then the GSA is brought into the picture?

Mr. KNOTT. Yes, sir.

Mr. EVINS. If it is exclusively a post office building, then the Post Office handles it entirely?

Mr. KNOTT. When it is a mechanized postal facility.

Mr. BOLAND. Are they not building more than that?

Mr. KNOTT. No, sir.

Mr. BOLAND. Are you sure? Do you have a list of buildings delegated?

Mr. KNOTT. Yes, sir.

Mr. EVINS. Well, we noticed in the budget, Mr. Administrator, that there are no new projects for GSA, but there is a number in the budget for the Post Office Department, and we asked the Budget Officer about this discrimination.

The Congress called upon the GSA to be the sole agency for construction and managing public buildings. Now this authority has been fragmented.

Mr. KNOTT. Since he has not been on the job too long, he is probably not familiar with this delegation or with the inconsistency that has been in effect in the GSA-Post Office relationships since GSA was created 19 years ago.

OPERATION OF POSTAL FACILITIES

GSA has repair responsibility for all Government-owned post office buildings, but it does not operate all post office buildings. GSA may have operational responsibility for some part of a building and the post office may have operational responsibility for the remainder of a building. These inconsistencies were written into the exceptions promulgated under Reorganization Plan 18 in 1950 and there has always been that duplication and overlapping.

POST OFFICE DEPARTMENT LEASE CONSTRUCTION

More than that, there have been over 9,000 post offices built for the Post Office Department under the lease-construction plan since 1954, and according to a recent report, they are continuing to build and project that they will continue to build through 1972 under lease-construction arrangements, at the rate of about 1,035 per year, so that whatever GSA does, no matter what figures we talk about in terms of numbers they are small indeed by comparison with what the Post Office proposes, is doing now, and has continued to do for many years.

SPACE UTILIZATION

Mr. EVINS. I understand, Mr. Administrator, but if it is a building involving utilization of space by other agencies of the Government besides the Post Office Department, then GSA is called into the picture.

Mr. KNOTT. Under the leasing statute passed a year or so ago, the Post Office Department must now consult with us before, or at least we get an opportunity to look at their planning before they proceed with lease construction of postal facilities with more than 20,000 square feet.

The law still falls short of enabling the Post Office Department to provide a limited amount of space in a leased post office building for other Federal agencies. As a result when they vacate a build-

ing in a community we find ourselves in the position of deciding whether to remodel the old post office building, which they have vacated for use of nonpostal agencies.

POD LEASE CONSTRUCTION

Mr. EVINS. The Post Office built about 1,000 small post offices under the lease arrangement per year.

Mr. KNOTT. That is right. That is the projection through 1972. In an opinion issued some 4 years ago, the Comptroller General said that in his judgment the larger facilities, at least, should be Government owned and Government constructed. I believe it was this opinion that prompted the Postmaster General to seek construction authority about 1964.

GSA objected to that proposal and continued its objection until after the legislation was cleared by the Bureau of the Budget and sent to the Congress early in 1966.

GSA'S CONSTRUCTION AND MANAGEMENT CAPABILITIES

Mr. EVINS. The way this committee sees it, Mr. Administrator, is that the Congress regards GSA as the agency responsible for the construction and management of Federal buildings and we feel that you have built up a great operational capability in this area which apparently is not going to be fully utilized.

Mr. KNOTT. Mr. Chairman, we will have no larger staff than needed to get the job done, but the Post Office is only one example of the proliferation that exists in design and construction of construction projects in the Federal Government.

When the water pollution laboratories were with HEW, we were constructing them. Now that the function has been transferred to Interior, Interior constructs them.

POD NEEDS VERSUS OTHER AGENCIES OF GOVERNMENT

Mr. EVINS. Are the Post Office needs greater than the needs of all other agencies of Government?

Mr. KNOTT. This is hard to say. I do not know whether they are greater or not. We supply space for military and civilian agencies.

SPACE REQUIREMENTS

Mr. EVINS. You are not anywhere near reaching the saturation point on your space requirements, I judge, and you have not caught up with your work.

Mr. KNOTT. No, sir; we are a long way from meeting our needs. We are leasing considerably more space, particularly in this area, than we are building, by far.

Our annual rent bill has gone up from $6 million in 1956 in the National Capital region to nearly $50 million.

Mr. EVINS. Well, despite all the buildings we have built in the Nation's Capital, we have now about a $50 million annual rental bill.

Mr. KNOTT. That is close to it. We have to provide for the housing of more than 6,000 additional employees per year calling for approximately 1 million square feet of additional space per year.

Mr. EVINS. Mr. Administrator, I thought as we built more and larger buildings, we would diminish the amount of required leased space.

Mr. KNOTT. We are diminishing the square foot utilization rate of space by the use of new buildings. We have decreased the number of leases even though we have increased the amount of space we have leased because we are leasing in larger blocks.

Mr. EVINS. You have decreased the number of leases but you have increased the amount of cost of space rental.

Mr. KNOTT. In total, that is right, sir, and it will continue that way. I see no end to an increase in our leasing activity.

Mr. EVINS. Is it wise to continue to lease and have increased rental bills?

Mr. KNOTT. We think we ought to own at least 80 percent of our requirements nationwide, if we could, but that is an ideal objective that we will probably never reach.

CONSTRUCTION IN THE DISTRICT OF COLUMBIA

Mr. JONAS. Would you say that this is a correct statement, and I quote:

> At least 30 major Government buildings estimated to cost the sum of $680 million have been finished recently or under construction or in the planning stage in the Washington area.

Does that sound about right?

Mr. KNOTT. That is probably true, over all, with all the agencies taken into account.

Mr. JONAS. I have mixed feelings about this situation. We established in this committee, in conversations with you people a few years ago, that the leasing of public buildings is more expensive.

Mr. KNOTT. And we believe that.

Mr. EVINS. It was found so by the Comptroller General.

Mr. JONAS. That is right. At the same time, we are faced with the situation where we do not have any money. If we had the money in the bank and would go out and build a building, it would be cheaper than renting in the long run.

Mr. KNOTT. That is right.

WALL STREET JOURNAL ARTICLE ON POD LEASED SPACE

Mr. JONAS. But the Government is already operating in the red.

I have mixed feelings about it but there is developing a dialog around the country on this subject. I was interested in reading a story in the Wall Street Journal February 15, 1968, written by Noel Epstein, and his opening sentence reads:

> Some people collect stamps. I collect Post Offices.

He goes on to quote a man who says that he has about 70 post offices that he owns around the United States. This article says that Dr. Davenport in Long Beach, Calif., is not the only one in this business.

Of 29,000 buildings occupied by the Post Office Department at the end of last June, 26,715 or 90 percent were privately owned and leased to the Government. That trend is continuing and it apparently is getting to be quite a business.

This article goes on to say that many people now trade contracts, sort of like buying stock on the market. A man gets a bid and he auctions it off to some of his competitors and makes a profit and drops out of the picture and does not have any of the risk and it also points out that the risk is minimal where you have a Government guarantee of rent and 100 percent occupancy over a period of time.

Mr. KNOTT. Many developers prefer to have Government as a lessee because they have only one party to deal with.

LEASE-PURCHASE PROJECTS

Mr. JONAS. Are you completely out of the lease-purchase business? How many more projects do you have?

Mr. KNOTT. Five.

Mr. JONAS. Are you buying up as fast as you can?

Mr. KNOTT Yes.

Mr. JONAS. You have bought up how many?

Mr. KNOTT. Twenty-four out of the 29. There were 29 altogether.

Mr. JONAS. That was done because of the agreement on the part of everybody that it was the most expensive way to acquire buildings. Now you are not leasing?

Mr. KNOTT. No, sir.

Mr. JONAS. You are not in the leasing business?

Mr. KNOTT. No, sir; not in the lease-purchase business.

Mr. JONAS. I mean lease-purchase or lease-owner.

Mr. KNOTT. Lease-purchase, right. We used it to the extent of 29 projects.

POD LEASING OF SPACE

Mr. JONAS. But now after you are getting out of the lease-purchase business the Post Office Department is going in the leasing business in a big way.

Mr. KNOTT. There is no question about it.

Mr. JONAS. According to this article.

Mr. KNOTT. But they do have these restraints that they did not have before. They do have to clear with us. At least we know then what areas they are working in and secondly, they do have to go to the Senate Public Works Committee and the House Committee on Post Office and Civil Service with a proposal where it involves more than 20,000 square feet.

Mr. BOLAND. A lot of them are not 20,000 square feet. I suppose one reason the post offices have so many is because a lot of them are relatively small. Perhaps the Government is better off not owning the site and the building. They may want to move from the area in 20 years.

Mr. JONAS. May I read one other quote here, just to show why this is a thriving business?

They quote an operator named Seymour Rubin, of Miami Beach, who says that he owns about 60 post offices, on a regular building that cost, say, $1 million and you had to put down at least $300,000,

but, with a post office I can put down only $100,000 even in tight-money times because the Government lease payment is guaranteed. The result is with the $300,000 you can buy three post offices and get three times the revenue on your investment.

This same article gives a projection of something like 1,035 new buildings annually through 1972; that is, post offices.

Mr. EVINS. You testified that the Post Office would lease about 1,000.

Mr. KNOTT. 1,035.

Mr. EVINS. I thought you said 1,000 annually.

Mr. KNOTT. Yes; but the precise figure is 1,035.

Mr. EVINS. Well, it seems, Mr. Administrator, that we are going in opposite directions.

The Comptroller General said it was more costly to lease and that the Government should own its own buildings. GSA stopped leasing and started building the buildings.

Now, the Post Office Department is utilizing the lease basis, which is the most expensive.

Mr. KNOTT. The Post Office Department has never stopped leasing. They haven't built the Government-owned facilities under the delegation as yet, and even this $88 million that is in their 1969 budget, while it looks large in terms of construction program in a year that GSA proposes a moratorium on new construction funding, two large projects began as lease construction projects and are now ready for contract award. Since they are now to be constructed as Government-owned projects, they must be authorized first by the Public Works Committees, or the funding request will, of course, be subject to a point of order. As I pointed out, the reason they are asking for the site-and-design money and construction money at the same time for two projects is that they have already been designed.

To the extent the Post Office has site and design money in their appropriation request for San Diego and New York it is merely to reimburse the account in fiscal year 1969 that they use to buy sites, in their leasing program for lessors to bid on. The rest of it is for construction.

POSSIBLE PURCHASE OF COMMERCIAL BUILDINGS

Mr. EVINS. Mr. Administrator, in view of the increase in leasing costs and the increasing need for space, has consideration been given by the GSA to the purchase of commercial buildings?

Mr. KNOTT. We have explored that possibility. As you know, there is an authorized building at Reston, Va., for the Geological Survey which has not been funded except for design. It is being designed on a donated site, of some 50-odd acres to which we added an additional 35 acres which were purchased. The new management out there has proposed to sit down and talk with us about building the building according to our design on the basis of doing it for the cost of the money.

Mr. EVINS. Cost plus a certain percentage?

Mr. KNOTT. Building cost plus the cost of the money.

The incentive for his doing that is the same kind of incentive that induced the prior management to donate 50 acres in the first place.

He plans to develop a viable community, where people are living and spending their money right there locally.

Mr. EVINS. It is a very attractive community.

Mr. KNOTT. Our discussion has been tentative only, so far. We might very profitably explore the possibility of buying some of the buildings we lease because in many cases, developers talk with us about their plans as they build and we give them general guideline specifications; that is, the size modules that are most suitable for our needs, and other general guides.

POD DELEGATION FOR INDUSTRIAL-TYPE FACILITIES

Mr. BOLAND. You asked the delegation of the Post Office Department based on the type of building it built and most of it was industrial?

Mr. KNOTT. Yes.

Mr. BOLAND. It is understood you delegated the authority in 14 buildings here. Can you say these are all industrial-type buildings and there is no particular space there which can be used or would be used for office purposes?

Mr. KNOTT. All of them are.

Mr. BOLAND. Are you sure of that?

Mr. KNOTT. I believe that is right. These are all industrial facilities. There is a building, the Morgan Annex Station in New York, which suffered a substantial fire in December and they are still undecided to proceed with it or not. That building does have some office space. But now, this is an addition to it, as a postal facility.

Primarily, this is a bulk mail distribution plant and central truck facility in downtown New York. They are, in the meantime, using the Brooklyn Army Terminal and giving some thought to possibly using that on a long-term basis rather than rebuilding the damaged structure downtown.

Mr. SCHMIDT. There is one in there, the Los Angeles Barrington Station, which might be in a different class. However, we had no nonpostal requirements in that area. It is strictly a postal station.

MANCHESTER, N.H., POST OFFICE AND FEDERAL OFFICE BUILDING

Mr. WYMAN. I have some specific questions on the post office question at Manchester, N.H. If this is not the place, I will not ask them, but you asked about the new projects and I understood that Mr. Knott said that some 70 new projects, or 78 new projects were held in abeyance because of budgetary restrictions. You have $1 million I think, or something like that last year for site acquisition, and so forth, of a post office and Federal building in Manchester, N.H.

What has happened to this? Nothing has happened yet, has it, Mr. Knott?

Mr. KNOTT. We have made some site studies and a tentative selection of a site. The architect, I believe, is going through the diagrammatic stages of the design.

Is this true, Mr. Schmidt?

Mr. SCHMIDT. That is correct.

Mr. WYMAN. Who is the architect?

Mr. KNOTT. I don't recall the firm name at the moment. He is the same architect who designed the Concord Building.

ACQUISITION OF LAND

Mr. WYMAN. While he is looking for that, Mr. Knott, this is now almost March. Are you going to acquire this land?

Mr. KNOTT. Yes; but I don't know what our schedule is.

Do you have a schedule on that, Mr. Schmidt? I believe I wrote you concerning this project.

Mr. WYMAN. You did, but without reference to that, I want to ask you some specific questions because here we put some money in this appropriation last year to have a Federal building and post office building in Manchester, and 9 months have gone by and you have not even acquired the site.

As far as I know, the architect has not been retained, the design has not been completed, and now I understand funds have been deferred until the last of fiscal 1970.

Mr. KNOTT. We got the money, I believe, in November or December, so it is not really 9 months.

Mr. WYMAN. Do you intend to go ahead as expeditiously as is compatible with the situation in New Hampshire and do the things necessary to acquire and be ready to go ahead with construction in fiscal year 1970?

Mr. KNOTT. I do not know that we can go ahead in fiscal year 1970 on construction, because we have projects on which we have design completion right now, and yet we have no money in our budget for 1969 for their construction.

To project when we would budget for its construction is a little difficult, Congressman.

BUDGET BUREAU CONSTRUCTION RESTRICTION

Mr. WYMAN. Well, barring the Bureau of the Budget's restriction, this money for construction, some of it would have been included in this presentation, would it not, for fiscal year 1968?

Mr. KNOTT. It is not only the Bureau of the Budget, but congressional restrictions also.

Mr. WYMAN. What congressional restriction is restricting money for a Federal building in Manchester, N.H.?

Mr. KNOTT. On the level of obligations.

Mr. WYMAN. That applied only to moneys that have already been appropriated; did it not?

Mr. KNOTT. Yes, sir.

CONSTRUCTION PROJECT PRIORITIES

Mr. WYMAN. So, if it was 10 percent coming back on that, that would have meant instead of $1 million, you would have had $900,000 for your site acquisition and design.

Do you have any schedule of priorities as between recommended priorities, as between Federal buildings in these various areas around the country that are now pending that have been held back?

Are there any that you think are more important than others?

Mr. KNOTT. There always is, but I would not put Manchester, N.H., in a low category, particularly for the reason that one of the motivating factors there was the urgent need for post office facilities and

because of the always continuing threat that if we do not proceed with construction on a timely basis, the Post Office Department might turn around and lease—construct—and GSA would be opposed to that.

Mr. WYMAN. That is one of the reasons why at this point, Mr. Chairman, I brought this up, because your justification, shown in terms of the table at page 32 of the unfunded public buildings projects, tended to show that this would pay for itself and save quite a bit of money if it was constructed.

Mr. KNOTT. That is true. That is true in every case of a building of that significance.

FUNDS FOR THE MANCHESTER PROJECT

Mr. WYMAN. Did you ask the Bureau of the Budget for this money for Manchester, N.H.?

Mr. KNOTT. For the apportionment of the site and expense money.

Mr. SCHMIDT. The money has not been apportioned.

Mr. WYMAN. Is that the reason why you have not gone ahead with it?

Mr. SCHMIDT. We have gone ahead with site studies. We are not in a position to acquire the site until such time as the money is apportioned.

Mr. WYMAN. It is the executive branch, then, that is deferring your ability to purchase the site.

Mr. SCHMIDT. Well, it is because of the same freeze that is affecting construction.

Manchester, N.H., and other projects for which funds were appropriated for sites and expenses in 1968 have been deferred. We are going ahead with the site study.

THE 1968 OBLIGATION LEVEL

Mr. KNOTT. You understand that we have level of obligation for fiscal year 1968, just as all agencies were given in December and we can proceed within those levels.

Actually, when we got our obligation levels for construction in December, for example, we already had bids and had accepted bids for an amount almost equivalent to the total amount we could obligate this year.

Mr. WYMAN. Who is holding this back, the Bureau of Budget?

Mr. JOHNSON. Yes, sir; the 2 to 10 percent was applied in the administrative branch in total, not by item; not by individual item within an appropriation, but in total.

Mr. WYMAN. You have decided then it is the end 10 percent that this was in, and therefore you are deferring it?

Mr. JOHNSON. No, sir; they applied an 18-percent reduction, not a 10-percent reduction to us, on obligations.

Mr. WYMAN. Is there any indication of when this policy may be changed?

Mr. JOHNSON. No, sir; not at this point.

CONSTRUCTION PROJECT FUNDS

Mr. WYMAN. Well, now, did you go to the Bureau of the Budget to ask for the construction money for fiscal year 1969 for this building?

Mr. KNOTT. No, sir; we asked for no money for construction of any project, including those that are already designed.

Mr. WYMAN. So that GSA did not ask for any construction money.

Mr. KNOTT. Exactly.

Mr. WYMAN. Is that so for all of these unfunded buildings that appear in this report?

Mr. KNOTT. That is right.

Mr. WYMAN. Why did you not ask for any money to build the buildings if you had the site acquisition? Were you under an injunction of policy at any point in this regard?

Mr. KNOTT. No, sir; I think I had a responsibility. We were given a target figure within which we should construct our budget figures and I had an obligation to recommend cuts where I thought they should be made.

I recommended not only that GSA not be funded to construct any new buildings in 1969, but that there be a complete moratorium on new Federal construction.

Mr. WYMAN. We have been led to believe that this building was going to come along in Manchester, N.H., and I only speak of Manchester as one illustration; that it was needed; that it was necessary; that GSA was acting because they thought it was necessary, and yet, you do not even go to the Bureau of the Budget to ask for the money for the construction of it.

Mr. KNOTT. I do believe that the building is needed and justified, but I believe there are overriding considerations that have to be met.

I think it is the overriding budgetary situation in which we do not have the tax revenues to provide for the ongoing expenses of the Federal Government.

Mr. WYMAN. Is not there any place in the $500 million-odd you have in your budget that could be deferred or is of a lesser priority than the construction of buildings that are going to save $14 million to the Government if they are built?

Mr. KNOTT. Well, as I pointed out this is the lowest budget that we have had in 9 years.

We have 64 percent more space to maintain and we are doing it with only a 24-percent increase in personnel. We are called on for more services and this is why I have pointed out the fact that we need the additional people to do our job. But new construction funding was an area which we could postpone.

Mr. WYMAN. There is just one other thing, Mr. Chairman.

NEW CONSTRUCTION, 1969

Mr. EVINS. I understand there are no funds in the GSA budget for new construction in 1969 throughout the country.

Mr. KNOTT. That is right.

Mr. WYMAN. But you did not tell me that. Did you not in your report to me indicate that the Bureau of the Budget had turned down the request for the construction money?

Mr. KNOTT. No; we were talking about apportionment of the sites and the expense money. That is all we were talking about at that point.

Mr. WYMAN. But there are 48 buildings around the country that you did not ask for any money for to build in 1969?

Mr. KNOTT. That is right.

RESTON, VA. PROPOSAL

Mr. TALCOTT. With regard to the Reston proposal and the Geological project, what you are suggesting is a turnkey project without competition?

Mr. KNOTT. Under those conditions that would be true, and this is what I would want to look at.

Mr. TALCOTT. You have to be pretty careful about such an arrangement. Turnkey might be a pretty good idea; but if there is no competition, then I think we lose many benefits of a turnkey project.

Mr. KNOTT. I think you are absolutely right.

Mr. SCHMIDT. If I may add something there as far as the construction of the building is concerned, they would permit us to go for competitive bids on the construction as far as Reston.

Mr. TALCOTT. They would, or they would not?

Mr. KNOTT. They would. So, there would be that competition.

The negotiation would be solely on the basis of the financing. Their proposal would be strictly at the cost of the money.

Mr. TALCOTT. Just the land?

Mr. KNOTT. Fifty acres of the site were donated by Reston, but the construction of the building would be done competitively.

APPROPRIATION PROVISION

Mr. EVINS. Well, there are two provisions in the law with which the Administrator is familiar.

It says no part of any appropriation contained in this act shall be used for the payment of rental or lease agreements for the accommodation of Federal agencies in buildings and improvements which are to be erected by the lessor for such agencies at an estimated cost of construction in excess of $200,000. If it is beyond $200,000, they are not to do it except if it is submitted to the Congress and approved.

Mr. SCHMIDT. The Geological Survey building has been authorized by the Committees on Public Works.

Mr. EVINS. This has been approved by the Congress.

Mr. SCHMIDT. Yes, sir, and funds appropriated for site and design.

Mr. EVINS. Mr. Administrator, how much new lease space is estimated for 1969?

Mr. SCHMIDT. While there is no rental money in this budget for additional leased space, since this would be from the expansion of Federal agencies in 1968, we are informed that from lists furnished to us by the agencies, that this could amount in the neighborhood of $14 million.

Mr. EVINS. That is what I want. The amount is about $14 million?

Mr. SCHMIDT. About $14 million.

Mr. KNOTT. The transfer amount this year is about how much, $10 million?

Mr. SCHMIDT. It is $10,136,000.

ESTIMATED SAVINGS OF CONSTRUCTION VERSUS LEASING

Mr. EVINS. Have you given consideration to the estimated savings if the Government owned the buildings? $14 million for new space in 1 year is a lot of money. If this new space is needed, what would be the estimated savings if you were to proceed with construction?

Supply that for the record.

(The information requested follows:)

If the Government were to construct the equivalent amount of space to be leased for agency expansion at an estimated annual rental of $14 million, the 50-year cost of Government construction, including interest and repairs, but excluding day-to-day maintenance and operation, would be $286.3 million. This compares with a 50-year cost of $465 million, based on net rental, for the leased space. On this basis, the cost of Federal construction, including interest and repairs, would be amortized over a period of 20.8 years. The estimated savings through Federal construction would be $3.57 million annually, or $178.7 million over a 50-year period.

WALL STREET JOURNAL ARTICLE ON DESIGN OF FEDERAL BUILDINGS

Mr. JONAS. I seem to have a lot of Wall Street Journals here this morning.

I was interested in another article that appeared in the February 9 issue.

I remember the former chairman of this commitee, the late Albert Thomas of Texas, used to talk to you a lot about eliminating the gingerbread as he called it, building functional buildings without a lot of frills. According to this article, we seem to have gone to the other extreme now.

They say the new Federal buildings are designed to curve gracefully away from property lines, span thoroughfares, bear such adornments as plazas, terraces, and arcades.

A Washington Post critic by the name of Wolf Von Eckhardt says a pair of new buildings here, and he refers to the U.S. Court of Claims Building, and says that the judges undoubtedly enjoy looking out at the Potomac River through dazzling three-sided bay windows, and Secretary Weaver and his aides undoubtedly are going to enjoy the curving corridors and exposed interior walls in the new HUD building.

Who is doing the design work now, is it Mr. Hunter or is he just the assistant?

Mr. KNOTT. He is the Assistant Commissioner for Design and was at the time Mr. Thomas was chairman.

Mr. JONAS. He must have gone to school in the meantime.

Mr. KNOTT. No, sir; actually the building, which they picture, was designed by Marcel Breuer of New York is not costing any more per square foot than the block buildings you are talking about.

Mr. JONAS. That is what I was leading up to.

Mr. TALCOTT. Why is that?

Mr. KNOTT. It is simply a matter of ingenuity in design.

Mr. BOLAND. It is different material.

Mr. KNOTT. There is a common misconception that unique design is expensive and it is not necessarily so. I think that is really what the Wall Street Journal article is saying here.

Mr. JONAS. The article was not necessarily critical, but it indicated there has been a substantial change in point of view of the designers.

Mr. EVINS. Gentlemen, if you will yield, GSA has been criticized for building forts. They state they look like forts and the architecture is not acceptable. They are criticized both ways.

Mr. WYMAN. I would like to say I think it is attractive. I think it gives much more window space and its unique design is excellent and should be encouraged. I think it is good.

Mr. BOLAND. Do you mean the new HUD building? I think it is great also.

Mr. WYMAN. But I wonder, Mr. Administrator, about the dull red bricks right next to the White House?

Mr. BOLAND. Those are beautiful buildings.

Mr. KNOTT. That restoration on the old Court of Claims is going to be one of the finest jobs that we have ever seen.

Mr. JONAS. The point of my question, I would like to have something in the record showing comparative costs and you made a general statement.

Mr. KNOTT. Yes, sir.

Mr. JONAS. And maybe Mr. Hunter would add to that or maybe you will add to it so we can be sure about these costs.

COMPARATIVE CONSTRUCTION COSTS

Mr. KNOTT. I can tell you that the cost of this building will not vary more than $1 or $2 per square foot from the Federal office buildings, in which the FAA and NASA are housed. Those were built about 1960.

Now, I am talking about the square-foot cost. It is true that the same buildings in different localities will vary in cost because of the market conditions and they are not good in North Carolina right now, I might say. They are high, very high. They are good in Texas and they are high in New York State. They will vary all over the country.

(The information requested follows:)

Comparative construction cost of buildings in Washington, D.C., constructed under the Public Buildings Act of 1959

Building	*Cost per gross square foot*
Federal office building No. 6	[1] $22.24
Federal office building No. 9	[1] 20.41
Federal Office building No. 10	[1] 21.45
Housing and Urban Development building	18.26
James V. Forrestal Building (Federal office building No. 5)	[2] 20.80

[1] Costs adjusted to July 1, 1965, the construction award date for the HUD building.
[2] Construction contract awarded July 30, 1965.

INCREASE IN COST OF CONSTRUCTION

Mr. KNOTT. The "Engineering News Record" projects a 7.1-percent increase in the cost of construction this year with the largest part going for higher wages. Over 8 percent for unskilled labor and skilled labor about 7 percent. Material costs rise about 4 percent.

Mr. JONAS. The one question that occurs to me, and I would like to have you discuss this, Washington is a high-cost area per square foot for land.

Are you getting adequate land utilization?

Mr. KNOTT. Actually, Mr. Jonas, we are paying less per square foot for the office space we occupy today than we were paying 5 years ago.

We have in the last year gotten out of $6.50 per square foot space and moved into space that has cost us less than $5.

We have a ceiling on what we pay for space in this city at $5, and we are renting space in the city at $5 and at $4.50 or less in the nearby developments. We have been far more successful in recent years in getting agencies to locate in peripheral locations.

Mr. JONAS. That is not what I am getting at. This was Government-owned land.

Mr. KNOTT. I see.

Mr. JONAS. I would like to have a comparison of the land utilization in the HUD building as compared with the FAA building for example, to determine whether you got too much wasted space that is not being utilized.

Mr. KNOTT. That is the best illustration of any building I have ever seen nationally, the HUD building per square foot of ground utilized. It is far better than any other.

It is those curves in the building that give it the perspective of a deep setback, but in fact, on the opposite side the L'Enfant Plaza comes within a matter of about 20 feet of our property line and yet you get a sense of spaciousness.

Mr. JONAS. Better utilization of the land.

You are saying if you build a building like the type occupied by FAA and NASA, you would not have gotten as good space utilization as you would get with this building and it would have cost more.

Mr. KNOTT. We achieved as good space utilization or better with this building and yet, we got an openness that we would not otherwise have provided in a block building on this limited site.

Mr. JONAS, Well, the article in the Journal was not critical. It was merely informative.

Mr. KNOTT. It would seem to suggest if you take the whole picture, that maybe we are paying for it. This is the point I do not think they made quite clear. It is not costing us any more for good architecture.

SQUARE FOOT UNIT COST

Mr. BOLAND. What is the unit cost per square foot?

Mr. SCHMIDT. I believe it is $20.80 per square foot gross.

Mr. KNOTT. The Forrestal Building is costing $20.80 whereas the HUD building will be $18.26 per square foot.

Mr. BOLAND. What about the Quesada Building? What are they paying, do you know?

Mr. KNOTT. I do not know.

Mr. BOLAND. They are two nice looking buildings.

Mr. KNOTT. Yes; they are, and the architect and builder are two of the best.

Mr. JONAS. I think the National Geographic is a nice building. I wonder what that cost.

Mr. BOLAND. What is the highest rent you are paying in Washington; is it the Universal Building?

Mr. KNOTT. We will be moving out of the Universal Building by the end of the year. We entered into that lease 10 years ago and are paying $5.50.

Mr. BOLAND. Where are you going to move the CAB?

Mr. KNOTT. In a building we just leased being built at 14th and I Streets, NW., which we are leasing for $4.97 per square foot.

Mr. TALCOTT. Are you saying a moon-shaped room of a certain number of square feet, say of 10,000 square feet and a rectangular room of the same square footage has the same usability of space?

Mr. KNOTT. I do not think we are talking about the same thing.

Mr. TALCOTT. There have to be some irregular shaped rooms in the HUD building, right?

Mr. KNOTT. Yes.

Mr. TALCOTT. I have not been in the building.

Mr. KNOTT. Yes; there would be a semblance of a pie or wedge shape.

SPACE LAYOUT

Mr. TALCOTT. Say with 1,000 square feet in a room that is pie shaped, would that have the same utility of a room that is rectangular when we must use all the modern types of desks, tables, and filing cabinets?

Mr. KNOTT. I think the space layout—and we have laid that space out because they will be moving into it by the middle of the year—Mr. Hunter will confirm my conviction that we are getting the same good utilization.

Mr. HUNTER. That is right. In other words, the building is shaped something like this (pointing to a sketch). This is the core in here. The normal office is fairly rectangular in shape. It is a very ingenious plan.

Mr. EVINS. It is impossible to have unit conformity in all places.

Mr. BOLAND. Who was the architect?

Mr. KNOTT. Marcel Breuer and Milan and Swinburne.

Mr. BOLAND. Did he also have the Washington Hotel building?

Mr. KNOTT. No.

Mr. TALCOTT. The purpose of a Federal building is just like a tool; it should have the utility of other tools. Wasteful or inefficient tools should not be tolerated.

Mr. BOLAND. But you have beauty also.

Mr. KNOTT. They belong to the public and everybody has something to say, not only where it is, but what it is going to look like.

Mr. EVINS. It is almost unanimous that you should be commended for the uniqueness of this design and the proper utilization.

Your testimony has indicated that the cost is less than some of the other types of building, and I think you should be commended.

CLEVELAND, OHIO, FEDERAL BUILDING

Mr. MINSHALL. Mr. Chairman, I do not wish to take up a lot of time of the committee, but I would like to have something in the record regarding the Cleveland Federal Building.

At the outset, I want to say that both Mr. Knott and Mr. Schmidt have been most cooperative with the GAO and my office in trying to find out what was wrong with the Cleveland building, and for this committee's information, the building has been plagued with one delay

after another for various causes, including fires, strikes, and change orders.

Accordingly, I asked the GAO last April, April 13 to be specific, to conduct an investigation of the building and its construction.

The building was originally authorized by the House and the Senate in 1960 for $37,860,000 and under the terms of the contract it was a 32-story building in downtown Cleveland to be completed within 860 days of the time that it was started.

Specifically, the completion date was to have been August 21, 1966.

DELAYS IN COMPLETION

To date, the building has not been finally inspected or turned over to the Government because of various change orders, strikes, and fires that I said, and there were to be liquidated damages in the amount of $3,000 per day for any delay.

With that background, I would like to say that I just received last evening this report from the Comptroller General. It is quite lengthy, some 35 pages in all with the appendix and 25 pages of report.

I would like to ask Mr. Knott specifically when will you conduct the final inspection which you specify as waiting, and I quote:

Completion by the contractor of certain minor items identified by a routine inspection.

What are the minor items awaiting completion?

Mr. KNOTT. If I may, Mr. Schmidt was there recently and I will call on him.

Mr. MINSHALL. He is the expert on this?

Mr. KNOTT. Yes.

Mr. SCHMIDT. These minor items are being completed now.

The building was substantially completed as of December 22, 1967, and the contractor is now finishing up the deficiencies and omissions in the work.

We, in turn, are holding back about $1 million until such time as he completes all of these items. Now, this is normal in any building after it is completed and put into operation and we complete our final inspection. It is up to the contractor to take care of all the little things that are identified.

FINAL INSPECTION

Mr. MINSHALL. My question is when will you have this final inspection?

When will these minor items awaiting completion be finished so we can terminate the contract?

Mr. SCHMIDT. Well, the final inspection has been made and the corrections are underway.

I cannot give you a date at the moment as to when the contractor will be through with all these corrections. In the meantime, the building is occupied.

CLEVELAND FOB TEMPERATURE PROBLEM

Mr. MINSHALL. I well understand that, and I have an office in it that is very attractive, but the trouble is we cannot keep it very cool. The temperature in the afternoon goes up to 83° and despite all the air

conditioning, a lot of other tenants on the west side of the building have complained that the sun shining in there is unbearably hot and uncomfortable. I speak from firsthand experience.

Mr. SCHMIDT. This is a matter of balancing the system and this will have to be done over a period of time, including time that may well run into the summer months when you actually get into air conditioning.

Mr. MINSHALL. When the temperature outside is 60° above zero, I still cannot keep my office comfortably cool. I am speaking from my own experience and others throughout the building have a similar complaint.

Mr. SCHMIDT. It is a matter of balancing the system and this does take time. It has to run through a heating and air-conditioning cycle.

CHANGE ORDERS, CLEVELAND, FOB

Mr. MINSHALL. Then on page 31 of the appendix, the report notes delays in construction, time extensions, and so forth.

You say that the completeness and detail of the records of the Cleveland building with respect to change orders, contractor delays and related matters leaves something to be desired. These are your words, and you say appropriate steps have been taken which will minimize the possibility of repetition.

This is all fine and good. However, it does not satisfy me that you have handled this matter prudently in this particular case in trying to save all you could of the taxpayers' dollars.

I wonder just how an equitable determination will ever be reached since the records you say are unavailable for all these change orders.

Mr. SCHMIDT. This does not suggest there were not any records.

The records could have been more complete, as related to change orders, especially those involving tenant changes, and the principal point of issue there is the amount of work that may have been in place and had to be removed in order to make the change; the documentation there was not as complete as we would have liked to have it, so as to establish this.

ONSITE INSPECTION UPGRADED

Mr. MINSHALL. Are you taking steps in other buildings throughout the country to have better supervision than you had in this particular instance?

Mr. SCHMIDT. Steps have already been taken.

Mr. EVINS. Mr. Commissioner, we all look forward on this committee when the course of the Vietnam war is over and we can move forward with many projects that are of interest to the committee.

ADDITIONAL QUESTIONS ON CLEVELAND FOB

Mr. MINSHALL. Mr. Chairman, rather than take the time of the committee, I will insert for the record at this point the rest of my questions.

(The questions and answers follow:)

Q. 1. The GAO report states that omissions and deficiencies noted by the project engineer included honeycomb in concrete, high spots on concrete floors, spray-on-fireproofing not thick enough, absence of required sleeves for conduit

to be imbedded in concrete, installation of unapproved pipe fixtures, condition of certain piping unacceptable and improper support for horizontal piping.

The report further states that "there are indications that there was some faulty workmanship in the original installation of the piping system which onsite inspectors did not detect. These conditions raise questions as to the overall quality and sufficiency of inspection."

GAO recommends that GSA strengthen its controls over onsite inspection practices, particularly in the area of improving recordkeeping standards.

I understand that you have initiated a project to do this. When did you initiate this "project"? At what stage are you? Certainly this is fundamental for evaluation of onsite construction inspection. What are your plans to upgrade inspection? When will it go into effect?

A. The project referred to was an overall study of design and construction procedures undertaken between November 1966 and February 1967. The study was undertaken by GSA personnel and three consultants retained for the purpose. The study, itself, is complete and implementation of its recommendations are in progress. At this time, 29 of the 50 recommendations have been implemented and the remainder will be installed in our systems by June 30, 1968.

The improvement of our construction supervision practices was the subject of four of the 50 recommendations and all of these have been implemented. This is not intended to infer that there can be no further improvement. Improvement in our procedures and practices is a continuing effort, beginning long before the study referred to above and continuing indefinitely into the future.

Specific actions which have been taken as a result of the cited study are:

(*a*) Establishment of a policy giving precedence in construction supervision to GSA employees, employees of other Federal Government agencies, Federal employees supplemented by AE personnel, and entirely AE personnel in that order.

(*b*) The numbers of individuals and types of skills specified for normal construction project supervision have been increased almost 100 percent.

(*c*) Increased use is being made of field grade inspectors at the GS–7 and GS–9 level in order to provide for more continuous onsite personnel.

(*d*) Wider use is being made of experienced retired personnel on a WAE (when actually employed) temporary-hire basis.

Actual onsite use of these improved procedures varies from project to project; availability of money and manpower resources is occasionally a constraint. Continuing attention is being paid to this and all other avenues open to GSA to do a better job at minimum cost.

Q. 2. When will you conduct the final inspection, which you specify is awaiting "completion by the contractor of certain minor items identified by our routine inspection"? What are the minor items awaiting completion?

A. The inspection which identifies deficiencies and omissions which must be corrected in order to satisfy requirements of the specifications was completed in mid-January 1967. The items required to be done involve mechanical, electrical, and architectural features. A total of 20 items of work at an estimated cost to the contractor of approximately $900,000 is involved. These include adjustment of secondary water chillers, replacement of defective valves in fan coil units, provision of position indicators on automatic valves, repair to duct insulation where damaged by fire, elimination of excessive mechnical noise on the 30th floor, correction of suspension of corridor light fixtures, completion of some painting, repair or replacement of plaza and colonnade paving, and similar items.

Of particular importance is the balancing of the heating and air-conditioning systems and the hot and chilled water systems. This is required in all new buildings, and the length of time required to complete this adjustment is a function of the size of the system. At a minimum, one seasonal cycle is necessary for proper adjustment of heating and air-conditioning systems. The final inspection, therefore, in which the contractor is relieved of further responsibility cannot take place until this air-conditioning adjustment is completed.

Q. 3. You say that the "completeness and detail of the records of the Cleveland building with respect to change orders, contractor delays and related matter leave something to be desired and appropriate steps have been taken which will minimize the possibility of repetition." That is all fine and good. However, it does not satisfy me that taxpayers' money has been prudently handled in this case, and I wonder how an equitable determination ever will be reached since records are unavailable. I am not at all satisfied that all of the time extensions were entirely reasonable.

(GSA letters dated Jan. 18, 1968 and Feb. 21, 1968 follow:)

GENERAL SERVICES ADMINISTRATION,
Washington, D.C., January 18, 1968.

Mr. HOMER G. SKARIN,
Staff Assistant, Subcommittee on Independent Offices, Committee on Appropriations, House of Representatives, Washington, D.C.

DEAR MR. SKARIN: In connection with the hearings before the House Subcommittee on Appropriations on February 28, 1967, Congressman Minshall requested that the committee or the clerk of the committee be advised of any further penalty-free extensions of time granted to the construction contractor for the Cleveland, Ohio, Federal office building.

As of the date of the hearing, the contract time had been extended 69 days for labor strikes and 188 days for the FBI changes on the 30th floor for a total of 257 calendar days, making the extended completion date May 5, 1967.

On September 15, 1967, the time was extended 152 days to October 4, 1967, because of design changes and tenant changes other than the FBI change noted above.

We are now reviewing the contractor's request for an additional 105 days' extension of time for work performed on the 22d floor for the Navy Finance Center and it appears that a substantial portion of this time will be granted.

Sincerely yours,

G. C. GARDNER, Jr.,
(For W. L. Johnson, Jr.,
Assistant Administrator for Administration.)

GENERAL SERVICES ADMINISTRATION,
Washington, D.C., February 21, 1968.

Mr. HOMER G. SKARIN,
Staff Assistant, Subcommittee on Independent Offices and Department of Housing and Urban Development Committee on Appropriations, House of Representatives, Washington, D.C.

DEAR MR. SKARIN: My letter of January 18, in connection with the extension of contract time to the construction contractor for the Cleveland, Ohio, Federal office building, advised you that we were reviewing the contractor's request for an additional 105 days extension of time for work performed on the 22d floor for the Navy Finance Center.

The contracting officer was recently authorized to extend the contract time 79 days from October 4, 1967, to December 22, 1967, because of the additional work performed for the Navy Finance Center.

Sincerely yours,

W. L. JOHNSON, Jr.,
Assistant Administrator for Administration.

A. It should not be inferred from our statement that the records of the Cleveland building with respect to change orders, contractor delays and related matters are inadequate, only that they could have been better. Nonetheless, they are sufficient to have enabled GSA to determine the basic cause for each delay and GSA has concluded that these delays are not attributable to the contractor under the terms of his contract.

Q. 4. What action has been taken to insure satisfactory operation of the piping and who will bear the cost of this "action"?

A. The piping systems in question were pressure tested and the contractor repaired all leaks at his expense. Strainers were removed, cleaned, and replaced in the welded piping systems. The strainers contained only the usual amount of welding slag normally encountered in a welded system. A thorough inspection was made of all rubberized pipe covering and the contractor was required to correct all defective work at his expense.

Q. 5. What hope is there of ever getting a clear accounting of the total amount involved in change orders; without prevalidation of funds for change orders, which you admit occured in the Cleveland project, are you going to be able to ever determine what amount should be paid by the contractor and what amount is a Government liability?

A. Before final settlement is made with respect to the Cleveland, Ohio, Federal Office Building contract, each and every change order will have been carefully reviewed. Those under $1,000 will have been reviewed by the inspection engineer

stationed at the site. Those over $1,000 will have been reviewed by the regional office estimates branch, with a further review of those over $50,000 being made by the central office estimates division. Where differences exist between the contractor's estimate and the Government's estimate, additional negotiations are conducted to arrive at a mutually equitable settlement. If an acceptable settlement cannot be reached, the Government unilaterally establishes a value of the change, and if the contractor disagrees and so elects, he may appeal the decision to the GSA Board of Contract Appeals.

Q. 6. Because of violation of the Anti-deficiency Act, which you reported (this involves obligations exceeding funds allotted to the region for the project) what disciplinary steps, if any, has GSA taken for those involved?

A. With respect to violation of the Anti-Deficiency Act, the President of the United States, the President of the Senate, and the Speaker of the House of Representatives were notified of this violation as required by the act. No disciplinary action has been taken with respect to this violation, inasmuch as investigation of the matter disclosed no willful, intentional, or malicious violation on the part of those involved of the regulations or the Anti-Deficiency Act. As a result of this violation, all operating officials involved in the administration of construction contracts have been appropriately reminded of their respective responsibilities for prevalidating all actions which constitute an obligation of Government funds.

Q. 7. You state that you are making plans for an extensive study of construction contracting procedures to test the premise that advertised, competitively bid lump-sum contracts may not be the best procedure for the Government to employ. At this moment, what are your views on this matter? As you are aware, GAO also plans a national investigation.

A. GSA is aware that GAO has indicated its intent to investigate application of liquidated damages. We are not aware of any proposed GAO study on methods of construction contracting.

The GSA study of all reasonable alternatives in construction contracting procedures is being developed deliberately; the study plan is intended to be comprehensive but practical. It will include the subject of liquidated damages.

It is too early to forecast completion of this study or whether it will result in any recommendation for change in present contracting procedures. At this moment we have no preconceived notions in the matter.

INCREASED CONSTRUCTION COST

Mr. EVINS. Mr. Administrator, you talked earlier about the increased architectural cost and increased construction cost.

Is it your testimony that delays in construction of needed Federal buildings will result in increased costs to the Government?

Mr. KNOTT. Yes, sir. I was speaking primarily about construction costs, and that is true.

Mr. EVINS. You state in your justification that the General Services Administration serves as the central agency for management acquisition and disposal of Government real and personal property, construction of public buildings, procurement of common-use supplies and services, acquisition, custody, and disposal of strategic and critical materials, custody of the National Archives, and provision of records, transportation, communications, and public utilities services, and the purchase, lease, and maintenance of automatic data processing equipment for Federal agencies.

The General Services Administration was created in 1949 and subsequently amendments have been added, authorizing new functions.

You now have your program grouped into five services, performed mainly through 10 regional offices. The Office of the Administrator has, of course, policy direction. Other major operations are provided for in separate appropriations.

You have several funds. These funds are the buildings management fund, the general supply fund, the telecommunications fund, the automatic data processing fund, and the working capital fund.

How many funds, do you have, Mr. Administrator?

Mr. JOHNSON. We have five separate major funds.

Mr. EVINS. Including the working capital fund?

Mr. JOHNSON. Yes.

EMPLOYMENT

Mr. EVINS. GSA, historically, has shown a constant growth as we all know. This is due to many factors, natural growth of the Government activities and services, assignment of additional responsibilities by law, and more extensive use of GSA facilities by the agencies of Government.

According to your chart on page I–4, there are 134 people in the Administrator's office, and 3,212 in the Office of Administration.

Under the Office of General Counsel you have 130. Then your Federal Supply Service is your buying operation division. Your Archives and Records Service has about 2,000 people.

Property Management is 1,505; Public Buildings Services, and I might say this is maintenance, elevators, supplies, and cleaning, has 24,000.

It takes a lot of people to maintain the buildings and if they are not air conditioned and are not well serviced, you have a lot of complaints.

It is hard to satisfy all the demands of maintaining the buildings.

The Transportation and Communications Division has 3,067 employees.

Then you have your 10 regional offices.

Mr. Administrator, this is a very good chart.

SUMMARY OF INCREASES

On page 1–2 is a summary of some of the increases.

Let us take a look at this, gentlemen.

The construction, public buildings projects shows an increase over 1957 of $30 million. If you had compared it with last year you would have shown a decrease. Your first figure shows an increase. Why do you go back to 1957?

Mr. JOHNSON. It is a method of display. We try to display 3 years, 1957, 1960, and 1969.

Mr. EVINS. Your 1969 construction is a substantial decrease from 1960. Under buildings management the average net square feet is 201.8 million feet.

Mr. JOHNSON. Right.

Mr. EVINS. 201.8 million square feet of space managed which is an increase of 98.3 million over 1957.

The total cost of managing the buildings is $431.7 million for 1969.

Mr. JOHNSON. That is right.

Mr. EVINS. This is a $259 million increase over 1957.

Repair and improvement, that is an increase.

How many square feet of space is rehabilitated each year?

SQUARE FOOTAGE INVOLVED IN MAINTENANCE AND REPAIR

Mr. SCHMIDT. The total workload under that appropriation for 1969 is $187.9 million.

The actual square footage that is involved in maintenance, and repairs each year is substantially that figure. The amount that is involved in any one year in specific alterations, major alteration projects is substantially less. I do not have the exact figure, but I would be glad to furnish that for the record.

(The information requested follows:)

The 1969 estimate provides for conversions, extensions, and repairs and improvements to 21.4 million square feet of Government-owned space.

SUMMARY OF WORKLOAD INCREASES

Mr. EVINS. For 1957 the repair and improvement cost was $45.8 million.

For 1969 it is $83.7 million and, of course, you have a lot more buildings and space to repair. This is an increase of $37.6 million.

Let me take a brief look at your Federal supply service. Stores stock shipments goes up from $154 million in 1960 to $615 million for next year. These increases, I suppose, are incurred by the reason of the buildup in Vietnam and the general Government demand for more supplies.

Nonstore sales increased from about $70 million in 1957 to some $274 million in 1969.

Number of Federal record centers, you have consolidated one and you have 14 centers.

You have 10,500 cubic feet of records and inventory. This is a big increase.

Transportation and communications service, the number of motorpools in operation has gone up from 56 to 97. You have established several more motor pools in the 9-year period.

The number of vehicles goes up in the 9-year period from 17,342 to 51,350. The personal property utilization transfers are up in 1969 to $650 million.

This is personal property you are transferring.

Mr. JOHNSON. Yes, sir.

Mr. EVINS. No. 2 is the real property?

Mr. KNOTT. Right. Those utilization transfers are transfers between Federal agencies, one agency no longer needs it and it is transferred to another.

SUMMARY OF BUDGET ESTIMATES

Mr. EVINS. All these figures show a substantial growth historically of the GSA over the years and the summary of the budget highlights is shown on page 1–5. We will insert this page in the record at this point.

(The page follows:)

SUMMARY OF BUDGET ESTIMATES FOR 1969 AND COMPARISON TO 1968

	1968 comparable amounts [1]	1969 budget estimates	Change 1968 to 1969
A. Basic operations:			
1. Operating expenses, PBS	$271,881,000	$278,763,000	+$6,882,000
2. Operating expenses, FSS	71,781,000	76,534,000	+4,753,000
3. Operating expenses, NARS	17,970,300	18,728,300	+758,000
4. Operating expenses, TCS	6,028,000	6,510,000	+482,000
5. Operating expenses, PMDS	28,000,000	30,500,000	+2,500,000
6. Salaries and expenses, Office of Administrator	1,793,000	1,944,000	+151,000
Subtotal	397,453,300	412,979,300	+15,526,000
B. Construction and improvement:			
7. Repair and improvement	80,000,000	80,000,000	
8. Payments, purchase contracts	2,350,000	2,400,000	+50,000
9. Construction, public buildings projects	63,757,900		−63,757,900
10. Sites and expenses	20,285,000	10,995,000	−9,290,000
Subtotal	166,392,900	93,395,000	−72,997,900
C. Other appropriation items:			
11. Expenses, U.S. court facilities	1,000,000	1,200,000	+200,000
12. ADP revolving fund	10,000,000		−10,000,000
13. National historical publication grants	350,000	350,000	
14. Allowances, etc., former Presidents	251,000	267,000	+16,000
15. Expenses, presidential transition		900,000	+900,000
16. Working capital fund		200,000	+200,000
Subtotal	11,601,000	2,917,000	−8,684,000
D. Limitation items:			
17. Expenses, disposal surplus property	1,000,000	1,000,000	
18. Administrative operations fund	(13,200,000)	(14,165,300)	(+965,300)
Total direct appropriations	576,447,200	510,291,300	−66,155,900

[1] Includes appropriations in annual act, proposed supplementals, and transfers.

Mr. EVINS. There are six operating accounts and the total goes up $15,526,000.

Now, this is the pay increase.

Your next, construction and improvement shows a big decrease of $72,997,900. You have to make a payment on the purchase contract. Why does this go up?

Mr. KNOTT. Taxes.

Mr. EVINS. And on construction, in 1968 you had $63.7 million so you are down $63.7 million. There is no new construction.

Sites and expenses are down from $20,285,000 to $10,995,000. That is about a $10 million reduction in sites and expenses. You are asking for $10,995,000 so that you can make plans for future years. For certain other appropriation items, for instance for the courts, you want more money.

The ADP revolving fund, you are not asking for funding for this facility; a $10 million reduction.

The expenses, Presidential transition, $900,000. In the election year you have to put a little money in there.

Mr. JOHNSON. We are just following the law, Mr. Chairman.

Mr. EVINS. The law directs you to do this every 4 years.

On the working capital fund, you want to increase it by $200,000. What is this last item, a limitation on administrative operations?

Mr. KNOTT. Yes, sir.

Mr. EVINS. Let us take a look at page I–6.

The budget for 1969 proposes new obligation authority of $510,291,300, a decrease of $66,155,900 over the comparable total for 1968. There is, under basic operations, a net increase of $6.9 million primarily for management and operation of space in new Federal buildings scheduled for occupancy; an increase of $4.8 million in supply operations due to increased sales and related procurement for supply support to Federal agencies; an increase of $0.8 million in the nationwide records activity due to increased volume of records administered and reference services; an increase of $0.5 million, mainly in the communications area for increased management and technical assistance to civilian agencies and initiation of system improvement studies.

Are they utilizing your facilities?

Mr. KNOTT. Yes, sir; as a matter of fact we have quite a story to tell on how much they are using our services in this area.

Mr. EVINS. Also under basic operations there is a net increase of $2.5 million for the property management and disposal functions, principally for planned acquisition of a storage facility and increased storage and handling costs.

In construction and improvement the net decrease of $73 million from 1968 reflects no apropriation request for construction and a substantial reduction in sites and expenses funds consistent with the administration's policy to minimize additional commitments and expenditures.

Well, that is a very good summary of the budget.

We will place these items in the record, including the chart on page I–10, which shows a 1,356 increase in permanent positions.

(Documents referred to follow:)

HIGHLIGHT OF PROVISIONS FOR GSA IN THE 1969 BUDGET

The budget of the United States for 1969 includes proposed new obligational authority for GSA totaling $510,291,300, a decrease of $66,155,900 over the comparable total for 1968, as shown on the opposite page. Major changes are as follows:

A. *Basic operations* of GSA in the fields of real property, personal property, excess and surplus real and personal property, strategic and critical materials, records, transporation and communications management, and top direction of GSA are provided for in six appropriation items. An increase of $15.5 million over comparable amounts for 1968 is requested for this basic group to provide—

A net increase of $6.9 million primarily for management and operation of space in new Federal buildings scheduled for occupancy (a total additional amount of $10.9 million in operating expenses of public buildings programs, offset by a $4 million reduction due to release of space in connection with completion of new buildings and other reductions);

An increase of $4.8 million in supply operations due to increased sales and related procurement for supply support to Federal agencies, as well as additional specification, standards and cataloging actions, establishment of a material evaluation and testing laboratory, and increased ADP management information and procurement assistance to Federal agencies;

An increase of $0.8 million in the nationwide records activity due to increased volume of records administered and reference services;

An increase of $0.5 million, mainly in the communications area for increased management and technical assistance to civilian agencies and initiation of system improvement studies; and

A net increase of $2.5 million for the property management and disposal functions, principally for planned acquisition of a storage facility and increased storage and handling costs.

B. *Construction and improvement.*—The net decrease of $73 million from 1968 reflects no appropriation request for construction and a substantial reduction in sites and expenses funds consistent with the administration's policy to minimize additional commitments and expenditures.

C. *Other appropriation items.*—The net decrease of $8.7 million reflects a reduction of $10 million for the ADP revolving fund as no additional capital is requested for 1969, offset by increases of (1) $0.2 million for expenses, court facilities for costs of the U.S. courts incident to space expansion and furniture and furnishings, (2) $0.2 million for the working capital fund, and (3) $0.9 million for expenses, Presidential transition, submitted in accordance with Public Law 88–277.

The appropriate appropriation or fund available to the General Services Administration shall be credited with (1) cost of operation, protection, maintenance, upkeep, repair, and improvement, included as part of rentals received from Government corporations pursuant to law (40 U.S.C. 129); (2) reimbursements for services performed in respect to bonds and other obligations under the jurisdiction of the General Services Administration, issued by public authorities, States, or other public bodies, and such services in respect to such bonds or obligations as the Administrator deems necessary and in the public interest may, upon the request and at the expense of the issuing agencies, be provided from the appropriate foregoing appropriation; and (3) appropriations or fund available to other agencies, and transferred to the General Services Administration, in connection with property transferred to the General Services Administration pursuant to the act of July 2, 1948 (50 U.S.C. 451ff), and such appropriations or funds may be so transferred, with the approval of the Bureau of the Budget.

Appropriations to the General Services Administration under the heading "Construction, public buildings projects" made in this act shall be available, subject to the provisions of the Public Buildings Act of 1959 for (1) acquisition of buildings and sites thereof by purchase, condemnattion, or otherwise, including prepayment of purchase contracts, (2) extension or conversion of Government-owned buildings, and (3) construction of new buildings, in addition to those set forth under that appropriation: *Provided*, that nothing herein shall authorize an expenditure of funds for acqnisition, extension or conversion,

or construction without the approval of the Committees on Appropriations of the Senate and House of Representatives.

Funds available to the General Services Administration shall be available for the hire of passenger motor vehicles.

No part of any money appropriated by this or any other act for any agency of the executive branch of the Government shall be used during the current fiscal year for the purchase within the continental limits of the United States of any typewriting machines except in accordance with regulations issued pursuant to the provisions of the Federal Property and Administrative Services Act of 1949, as amended.

Not to exceed 2 percent of any appropriation made available to the General Services Administration for the current fiscal year by this act may be transferred to any other such appropriation, but no such appropriation shall be increased thereby more than 2 percent: *Provided*, that such transfers shall apply only to operating expenses, and shall not exceed in the aggregate the amount of $2 million.

Appropriations available to any department or agency during the current fiscal year for necessary expenses, including maintenance or operating expenses, shall also be available for (*a*) reimbursement to the General Services Administration for those expenses of renovation and alteration of buildings and facilities which constitute public improvements, performed in accordance with the Public Buildings Act of 1959 (73 Stat. 479) or other applicable law, and (*b*) transfer or reimbursement to applicable appropriations to said Administration for rents and related expenses, not otherwise provided for, of providing subject to Executive Order 11035, dated July 9, 1962, directly or indirectly, suitable general purpose space for any such department or agency, in the District of Columbia or elsewhere.

No part of any appropriation contained in this act shall be used for the payment of rental on lease agreements for the accommodation of Federal agencies in buildings and improvements which are to be erected by the lessor for such agencies at an estimated cost of construction in excess of $200,000 or for the payment of the salary of any person who executes such a lease agreement: *Provided*, that the foreging proviso shall not be applicable to projects for which a prospectus for the lease construction of space has been submitted to the Congress and approval made in the same manner as for the pulic buildings construction projects pursuant to the Public Buildings Act of 1959.

(*Independent Offices and Department of Housing and Urban Development Appropriation Act, 1968.*)

SUMMARY OF EMPLOYMENT 1968 AND 1969 (DIRECT AND REIMBURSABLE)

Appropriation or fund (by service)	1968						1969					
	Total		Central office		Field		Total		Central office		Field	
	Permanent positions	Average employment	Permanent positions	Average employment	Permanent positions	Average employment	Permanent positions	Average employment	Permanent positions	Average employment	Permanent positions	Average employment
Public Buildings Service	23,176	23,666.0	419	389.0	22,757	23,277.0	23,735	24,054.0	384	345.0	23,351	23,709.0
Operating expenses, PBS	576	548.0	124	118.0	452	430.0	576	539.0	124	116.0	452	423.0
Building management fund	21,215	21,772.0	100	97.0	21,115	21,675.0	21,875	22,359.0	100	99.0	21,775	22,260.0
Construction services	1,385	1,346.0	195	174.0	1,190	1,172.0	1,284	1,156.0	160	130.0	1,124	1,026.0
Federal Supply Service	6,499	6,512.5	1,236	1,159.2	5,263	5,353.3	6,924	6,862.7	1,295	1,236.5	5,629	5,626.2
Operating expenses, FSS	5,040	4,957.8	1,224	1,148.2	3,816	3,809.6	5,233	5,134.4	1,283	1,224.8	3,950	3,909.6
Advances and reimbursement, personal property activities	1,459	1,554.7	12	11.0	1,447	1,543.7	1,617	1,710.0	12	11.7	1,605	1,698.3
ADP revolving fund							74	18.3			74	18.3
National Archives and Records Service	1,993	1,954.5	856	835.7	1,137	1,118.8	2,013	1,969.5	839	816.6	1,174	1,152.9
Operating expenses, NARS	1,773	1,745.5	685	671.5	1,088	1,074.0	1,850	1,814.5	703	685.5	1,147	1,129.0
National Archives trust fund	88	86.0	88	86.0			88	86.0	88	86.0		
National archives gift fund	21	22.0	21	22.0			14	15.0	14	15.0		
Advances and reimbursements, records activities	111	101.0	62	56.2	49	44.8	61	54.0	34	30.1	27	23.9

Transportation and Communications Service	3,017	2,912.9	248	238.0	2,769	2,674.9	3,254	3,066.6	256	242.8	2,998	2,823.8
Operating expenses, TCS	395	380.0	216	207.1	179	172.9	411	390.0	224	212.1	187	177.9
Federal telecommunications fund	1,586	1,564.6	----	----	1,586	1,564.6	1,714	1,652.7	----	----	1,714	1,652.7
General supply fund	1,021	954.0	17	16.6	1,004	937.4	1,114	1,009.9	17	16.7	1,097	993.2
Advances and reimbursements, transportation and communications activities	15	14.3	15	14.3	----	----	15	14.0	15	14.0	----	----
Property Management and Disposal Service	1,544	1,484.0	302	282.3	1,242	1,201.7	1,544	1,505.0	302	282.3	1,242	1,222.7
Operating expenses, PMDS	1,159	1,120.6	242	222.6	917	898.0	1,159	1,120.6	242	222.6	917	898.0
General supply fund	32	31.0	----	----	32	31.0	32	31.1	----	----	32	31.8
DPA revolving fund	47	46.5	37	36.7	10	9.8	47	46.5	37	36.7	10	9.1
Lead and zinc program	2	2.0	2	2.0	----	----	2	2.0	2	2.0	----	----
Advances and reimbursements, defense materials activities	304	283.9	21	21.0	283	262.9	304	304.8	21	21.0	283	283.8
Salaries and expenses, Office of Administrator	133	126.7	50	47.3	83	79.4	141	133.7	50	45.7	91	88.0
Administrative operations fund	1,955	1,875.2	645	597.6	1,310	1,277.6	1,987	1,930.5	677	647.1	1,310	1,283.4
Working capital fund	530	498.0	23	21.0	507	477.0	570	536.0	25	23.0	545	513.0
ADP working fund	852	803.8	167	146.0	685	657.8	887	864.1	184	169.4	703	694.7
Advisory Commission on Economic Opportunity	8	11.0	8	11.0	----	----	8	12.0	8	12.0	----	----
Total GSA employment	39,707	39,844.6	3,954	3,727.1	35,753	36,117.5	41,063	40,934.1	4,020	3,820.4	37,043	37,113.7
Average employment:												
Related to new obligational authority		27,722.5	----	2,819.7	----	24,902.8	----	28,662.9	----	2,958.8	----	25,704.1
Other		12,122.1	----	907.4	----	11,214.7	----	12,271.2	----	861.6	----	11,409.6

NEW EMPLOYMENT

Mr. EVINS. Is that not a pretty big jump in positions, Mr. Administrator?

Mr. KNOTT. No, sir. Well—yes, it is a substantial increase; but not for the kind of services that we need to render.

Mr. EVINS. Tell us where the bulk of these new jobs are to be placed?

Mr. KNOTT. Public Buildings, in the operation of nearly 4 million new additional average square feet of space and also in our export packing operations of our Federal Supply Service.

Mr. EVINS. You have more Federal space, more buildings, and more overseas shipments.

Mr. KNOTT. That is right, sir.

Mr. EVINS. Look at this chart on I–11. It shows your personnel increases in every activity, I believe.

Are most of these in the field?

Mr. KNOTT. Yes, sir.

Mr. EVINS. Federal Supply Service goes up from 6,512.5 to 6,862.7. National Archives, from 1954.5 to 1969.5.

TAKEOVER OF IRS TAX RETURNS

Mr. JOHNSON. We are increasing the workload in that activity, sir, primarily from the takeover of IRS tax returns, which is a reduction in the IRS.

Mr. EVINS. I listened to the Administrator's statement about the historical documents.

Are income tax returns historical documents, and do they need to be preserved?

Mr. JOHNSON. We store them economically and provide access to them when needed.

The Director has asked us to take over additional workload and about 200 additional people in 1970.

Mr. EVINS. You are required to maintain the records of the IRS for 7 years?

Mr. JOHNSON. We are.

Mr. EVINS. But is it the law that the GSA must keep them for the IRS?

Mr. JOHNSON. No, but the facility is there, and they turn them over to us and we manage them more economically on a consolidated basis.

Mr. EVINS. I thought the GSA handled historical records.

Mr. KNOTT. Well, we do a job of selecting those which are of permanent significance and those which have to be kept for a statutory period.

Mr. EVINS. Is the increase in personnel due to the keeping of records for the IRS?

INCREASE DUE TO REFERENCE SERVICES

Mr. KNOTT. Not entirely. Think of the increase in the reference services that are called on for veterans' records and civilian personnel records from St. Louis alone.

We have 7 million reference calls per year in our National Archives and records service; 7 million. And we have 10 million cubic feet of records.

Mr. EVINS. People want to trace their ancestors and look up the DAR, I suppose.

Mr. KNOTT. That is some of the 7 million.

MAINTENANCE OF IRS RECORDS

Mr. EVINS. With respect to the required holdings of the Internal Revenue Service records, how much does GSA maintain for them?

Mr. KNOTT. We have well above 40 percent of their records, the largest of any agency in Government.

Mr. EVINS. How active are they?

Mr. KNOTT. It depends on how old they are. These business tax records which they have just turned over to us have proven to be very active records.

Mr. EVINS. How long has the GSA been maintaining the Internal Revenue Service files?

Mr. KNOTT. This was the business tax returns.

Mr. EVINS. You said they were just turned over to you.

Mr. KNOTT. This was an additional segment of their total records. Actually, we have been receiving and servicing IRS records since the Records Act of 1956.

Mr. MOODY. Of 1950.

Mr. EVINS. About 40 percent of Internal Revenue Service's records are required to be retained by GSA?

Mr. KNOTT. That is right.

Mr. JOHNSON. Here is a recent request we got from IRS Commissioner Sheldon Cohen. It explains what he wants us to do with respect to the next takeover.

Mr. EVINS. Tell us about it.

Mr. JOHNSON. He is asked us to become more current with respect to handling these tax returns, in other words, to clear his shelves and clear his space and put them in the record center.

Mr. EVINS. Will this increase the percentage you hold?

Mr. JOHNSON. Yes, sir; it will increase the percentage. There are about 200 people involved in the last request we got from the Commissioner.

EMPLOYMENT

Mr. EVINS. This personnel goes up for his recordkeeping.

In Transportation and Communications Service last year you had 2,912.9 jobs; next year it is 3,066.6.

Property Management and Disposal Service goes up from 1,484 to 1,505.

The Office of the Administrator goes from 126.7 to 133.7. Does that divide you and Mr. Moody?

Mr. KNOTT. No, this is for my office and Regional Administrators in our 10 regions.

Mr. EVINS. Mr. Johnson, why do you need this much increase in personnel?

Mr. JOHNSON. For three reasons. One is the workload increase; one is an area that we have not been as proficient as we should have been

in the past, in terms of internal audit and investigations; and third, for financing, for carrying on the administrative activities of the numerous Presidential commissions and small boards.

We provide them administrative services rather than going out and hiring a staff to do it, and they reimburse us for it.

Mr. EVINS. Every agency of the Government calls on you for services?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. You are going to do more internal audits on fiscal control and management?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. Do you do work similar to the General Accounting Office in your own shop?

Mr. JOHNSON. Yes, sir; this Office of Administration is a little bit unique in the Federal Government insofar as all of the primary administrative functions of the Agency are centered in this one unit. It does all of the accounting and supports all of the services with accounting, budget, investigations, and personnel actions.

INCREASE FOR AUDITORS AND INVESTIGATORS

Mr. BOLAND. What has been the weakness in the past, so that you have to suddenly increase the number of auditors and investigators?

Mr. KNOTT. Let me say this, that I have a deep conviction that we have not done as much in the way of prevention of possible wrongdoing in our large field of procurement as we ought to do, when you consider the amount of construction we have; the construction contracts, the supply procurement contracts that we have.

This is an agency that must be above and beyond suspicion at all times.

I mean this, that we cannot do wall-to-wall inventorying of $500 million worth of supplies, but we need to have checks on depots from time to time that tell us where the people have ready access; whether they can get out with supplies without being checked out.

Mr. EVINS. Where are you getting this personnel increase, incidentally?

Mr. JOHNSON. We have a very active campaign on, on audit personnel.

GSA'S NEED FOR AUDIT EXPANSION

Mr. EVINS. Has the GAO asked you to increase your surveillance and auditing activities because of your large business operations?

Mr. JOHNSON. Yes, sir; not only that, the Comptroller General in the last 10 years has shifted from the normal, financial document type audit to internal management type audit.

In 1958, the GSA had 97 auditors on the payroll. At the end of 1967 we had 79.

At the time our workload was drastically increasing we had decreased the audit activity by 18 positions.

We got to the point where we could not cover our activity sufficiently.

Mr. KNOTT. I would also like to mention the point that we have fewer super grades in the agency today than when we had 7,000 fewer employees.

ADVISORY COMMISSION ON ECONOMIC OPPORTUNITY

Mr. EVINS. The Office of General Counsel remains constant with 130 jobs. They must have a good law firm, with 130 lawyers.

The Advisory Commission on Economic Opportunity. This is new; and you currently have 11 jobs and you want 12 jobs.

Tell us what this Bureau does.

Mr. JOHNSON. Sir, this Commission is simply put in this chart to arrive at the total GSA employment.

That Commission is a Commission of the President that is recorded on the Civil Service Commission records as GSA employees by an agreement with the White House. It is funded by OEO completely.

Mr. EVINS. Funded by the OEO and carried on the records of the Civil Service Commission and you are reporting it. It is carried as your employees.

Mr. KNOTT. Total record of employment.

FUNCTION OF COMMISSION

Mr. EVINS. Well, that is just a handy place for the Commission to add some more duties and jobs for the GSA.

What is the function of this Commission?

Mr. JOHNSON. It is, in a simple version, a watchdog committee on the OEO program. It is a Presidential watchdog Commission to look at, on a continuing basis, the OEO program.

Mr. EVINS. You have them housed in GSA.

Mr. MOODY. That is a statutory Commission.

Mr. EVINS. Are they housed in GSA facilities?

Mr. MOODY. They are housed in facilities provided by GSA, but not in the GSA building.

Mr. EVINS. Well, total employment is 39,844 last year as against 40,934. Next year is a 1,090 increase.

PUBLIC BUILDINGS SERVICE FUNCTIONS

Let us look at the functions performed by the Public Buildings Services, operation and management; repair and alteration; construction; and miscellaneous activities.

Construction is down. Space management and buildings management both increase.

Operating Expenses, Public Buildings Service

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimated	1969 estimated
	Program by activities:			
	1. Buildings management	247,681	263,140	268,335
	2. Space management	6,003	5,868	5,964
	3. Design and construction	1,132	1,379	2,017
	4. Service direction	1,225	1,516	1,532
	5. Administrative operations	880	926	915
	Total program costs, funded [1]	256,921	272,829	278,763
	Change in selected resources [2]	1,020	−948	
10	Total obligations	257,941	271,881	278,763
	Financing:			
11	Receipts and reimbursements from: Federal funds (advances from other accounts for rental of space)	−1,478	−1,126	
25	Unobligated balance lapsing	841		
	New obligational authority	257,304	270,755	278,763
	New obligational authority:			
40	Appropriation	244,091	260,500	278,763
41	Transferred to other accounts		−1,040	
42	Transferred from other accounts	13,213	9,011	
43	Appropriation (adjusted)	257,304	268,471	278,763
44	Proposed supplemental for wageboard increases		2,027	
	Proposed supplemental for civilian pay act increases		257	
	Relation of obligations to expenditures:			
10	Total obligations	257,941	271,881	278,763
70	Receipts and other offsets (items 11–17)	−1,478	−1,126	
71	Obligations affecting expenditures	256,463	270,755	278,763
72	Obligated balance, start of year	1,536	2,342	2,351
74	Obligated balance, end of year	−2,342	−2,351	−1,836
77	Adjustments in expired accounts	2,805		
90	Expenditures excluding pay increase supplemental	258,462	268,472	279,238
91	Expenditures from wage-board supplemental		2,027	
	Expenditures from civilian pay act supplemental		247	10
	Expenditures are distributed as follows:			
01	Out of current authorizations	254,272	268,404	277,187
02	Out of prior authorizations	4,190	2,342	2,061

[1] Includes capital outlay as follows: 1967, $432,000; 1968, $455,000; 1969, $402,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $658,000 (1967 adjustments, −$91,000); 1967, $1,587,000; 1968, $639,000; 1969, $639,000.

OBJECT CLASSIFICATION

(In thousands of dollars)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	5,742	5,904	5,975
11.3	Positions other than permanent	26	28	28
11.5	Other personnel compensation	8	7	7
	Total personnel compensation	5,776	5,939	6,010
12.0	Personnel benefits	436	476	481
13.0	Benefits for former personnel	13	----	----
21.0	Travel and transportation of persons	345	392	412
	Payment to interagency motor pools	32	29	29
22.0	Transportation of things	9	5	5
23.0	Rent, communications, and utilities	631	619	669
24.0	Printing and reproduction	75	86	87
25.1	Other services	3,223	3,148	2,860
25.2	Services of other agencies	26	17	17
25.3	Payments to buildings management fund	245,707	259,523	265,613
	Payments to construction services fund	1,173	1,227	2,130
26.0	Supplies and materials	56	48	48
31.0	Equipment	255	372	402
32.0	Lands and structures	154	----	----
42.0	Insurance claims and indemnities	30	----	----
99.0	Total obligations	257,941	271,881	278,763

PERSONNEL SUMMARY

Total number of permanent positions	576	576	576
Full-time equivalent of other positions	5	5	5
Average number of all employees	529	548	539
Average GS grade	9.6	9.6	9.6
Average GS salary	$10,196	$10,881	$11,054

Mr. EVINS. Operating expenses increase by $6.882 million.

The net increase of this $6.882 million provides primarily management and operation of new Federal buildings scheduled for occupancy in 1968, offset by credits for space released resulting from new construction.

Tell us again how much new floor space will go under the management of the GSA in 1969.

SPACE MANAGEMENT

Mr. SCHMIDT. 3.7 million average square feet of newly constructed space will be operated in 1969.

In addition to that, when we occupy this space we will be releasing 960,000 square feet of leased space as well as 308,000 square feet of obsolete Government-owned buildings.

Mr. EVINS. Nearly 4 million square feet of new space.

Mr. SCHMIDT. We will be vacating 308,000 square feet of Government-owned buildings, obsolete buildings that are being replaced by this new space.

BUILDINGS MANAGEMENT

Mr. EVINS. Building management increases by $5.912 million over comparable amounts of last year. This is composed of increases in operation and protection of Government-owned space.

What is this $300,000 for moving and related costs?

Mr. SCHMIDT. That is in the moving alterations.

Mr. EVINS. Do the agencies reimburse you for these services you perform?

Mr. SCHMIDT. The only services that we provide in connection with moving and space alterations are those involved in moves we order in connection with the assignment and reassignment of space.

If an agency has an internal reorganization, it pays for its moving and space adjustments.

The total reimbursement in the Buildings Management fund from other agencies, for the operation and management of space as well as job order work, rentals and moving and space adjustments is estimated at $130.2 million for 1969.

Mr. EVINS. Mr. Reporter, place in the record pages I–12 through I–23.

(Documents are as follows:)

FUNCTIONS PERFORMED BY THE PUBLIC BUILDINGS SERVICE

Real property activities of GSA administered by the Public Buildings Service can be summarized in two general categories: (*a*) Those financed by direct appropriations, and (*b*) those financed by transfers of funds or reimbursements from other Government agencies.

(*a*) *Activities financed by direct appropriations to GSA*

(1) *Operation and management.*—Acquisition, operation, maintenance, protection, and utilization of general-purpose buildings and space; and overall administration of real property programs. Cost of these functions is financed from the appropriation to GSA for "Operating Expenses, PBS."

(2) *Repair and alteration of buildings.*—Maintaining, repairing, remodeling, improving, extending, and other changes in Federal buildings under the jurisdiction of GSA. These activities are financed from the appropriation "Repair and Improvement of Public Buildings."

(3) *Construction.*—Acquisition of sites; preparation of drawings and specifications; construction of buildings; and supervision of construction. These operations are financed from the appropriations "Construction, Public Buildings Projects" and "Sites and Expenses, Public Buildings Projects."

(4) *Miscellaneous activities.*—Provision of furniture, furnishings, and space for U.S. courts, funded from the "Expenses, U.S. Court Facilities" appropriation and payment of principal, interest, and taxes relating to lease purchase contracts, from the appropriation "Payments, Public Buildings Purchase Contracts."

(*b*) *Activities financed by transfers of funds or reimbursements from other Government agencies*

(1) *Construction.*—Acquisition of sites; preparation of drawings and specifications, construction, repair and alteration of general and special-purpose buildings, including construction supervision. Amount to be transferred for the foregoing purposes is estimated at $25 million in 1968.

(2) *Operation, management, and special alterations.*—Reimbursements from various Government agencies for the operation and protection of Government-owned and leased space; job order work for providing special facilities and improvements, such as the Post Office modernization program; and special services such as security guarding. Reimbursements for the foregoing purposes are estimated at $129 million in 1968.

SUMMARY OF NEW OBLIGATIONAL AUTHORITY AND RELATED AVERAGE EMPLOYMENT

	New obligational authority		Average employment					
			Total		Central office		Field	
	1968	1969	1968	1969	1968	1969	1968	1969
New obligational authority and related employment:								
Operating expenses, PBS	$271,881,000	$278,763,000	16,626	17,225	246	261	16,380	16,964
1. Buildings management (employment in BM fund)	262,467,000	268,379,900	15,998	16,566	84	86	15,914	16,480
2. Space management	5,859,000	5,919,100	447	440	68	67	379	373
3. Design and construction (employment in CS fund)	1,112,900	2,017,200	80	120	44	59	36	61
4. Service direction	1,516,100	1,531,800	101	99	50	49	51	50
5. Administrative operations	926,000	915,000						
Repair and improvement	80,000,000	80,000,000						
Program	79,074,000	79,014,000	1,749	1,774	27	22	1,722	1,752
(Employment in BM fund)			(1,199)	(1,199)	(12)	(12)	(1,187)	(1,187)
(Employment in CS fund)			(550)	(575)	(15)	(10)	(535)	(565)
Administrative operations	926,000	986,000						
Construction, public buildings projects	63,757,900							
Sites and expenses, public buildings projects	20,285,000	10,995,000						
Program	19,544,400	10,418,000						
Administrative operations	740,600	577,000						
Payments, public buildings purchase and construction	2,350,000	2,400,000						
Expenses, U.S. court facilities	1,000,000	1,200,000						
Total NOA and employment funded by NOA	439,273,900	373,358,000	18,375	18,999	273	283	18,102	18,716

Summary reconciliation of 1969 estimate to 1968 funds

1968

Appropriation in annual act	$260,500,000
Transferred from other agencies for space costs (81 Stat. 349)	10,136,673
Transferred to—	
Operating expenses, property management and disposal service	−420,000
Operation and maintenance, Post Office Department	−620,000
Proposed supplementals:	
Cost of wage board rate increases effected in 1968	2,027,000
Pay Act cost (net)	257,300
Total supplementals	2,284,300
Comparable total for 1968	271,880,973
Rounded in the estimate to	271,881,000

CHANGES IN 1969

Net additional cost of 1967 Pay Act	541,100
Buildings management:	
Government-owned space:	
Space in newly constructed buildings	6,290,000
Increased electrical consumption	400,000
Additional cost of wage board rate increases effected during 1968	1,420,000
Decrease for buildings to be abandoned due to completion of new buildings	−535,000
Adjustment in base due to transfer of U.S. Post Office and Customhouse, St. Paul, Minn., to the Post Office Department	−305,000
Decrease for cost reduction items	−847,000
Net increase, Government-owned space	6,423,000
Leased space:	
Reduction in rented space to be released due to completion of new buildings	−2,345,000
Increased rental rates	820,000
Increased electrical consumption	100,000
Additional cost of wage board rate increases effected during 1968	201,400
Net decrease, Leased space	−1,223,600
Moving, alterations, and other related costs	300,000
Buildings management, net increase	5,499,400
Design and construction	861,500
Administrative operations	−20,000
Total net increases in 1969	6,882,000
1969 estimate	278,763,000

ANALYSIS BY ACTIVITIES

Activities	1968 adjusted	Decrease	Increase	1969 estimate
1. Buildings management	$262,467,000	$4,652,000	$10,564,900	$268,379,900
2. Space management	5,859,000	----------	60,100	5,919,100
3. Design and construction	1,112,900	----------	904,300	2,017,200
4. Service direction	1,516,100	----------	15,700	1,531,800
5. Administrative operations	926,000	11,000	----------	915,000
Total	271,881,000	4,663,000	11,545,000	278,763,000

1968:	
Appropriation	$260,500,000
Adjustments	+11,381,000
Comparative	271,881,000
Change	+6,882,000
1969 estimate	278,763,000

GENERAL STATEMENT

"This appropriation provides for the basic real property operations of General Services Administration, including acquisition, operation, maintenance, protection, and utilization of general-purpose buildings and space; and for overall direction of buildings design, construction, repair, and modernization.

"The appropriation request for 1969 of $278,763,000, is a net increase of $6,882,000 above the comparable amount for 1968. The 1968 amount includes proposed transfers of $10,137,000 for annual costs of expansion space acquired in 1967, not provided for in GSA's 1968 budget, and $2,027,000 proposed for separate transmittal for wage board increases.

"The net increase of $6,882,000 provides primarily for management and operation of new Federal buildings scheduled for occupancy in 1968 and 1969, offset by credits for space released resulting from new construction." (From the budget for 1969.)

The estimate for 1969 includes $1,621,400 for the additional cost of wage board rate pay increases effected during 1968, and $1,779,800 for pay costs as a result of the Postal Revenue and Federal Salary Act of 1967.

The President's budget includes a proposed supplemental for 1968 in the amount of $2,284,300 comprising $2,027,000 for the cost of wage board pay rate increases estimated to occur in 1968, and $257,300 for the unabsorbed cost of salary increase resulting from the Postal Revenue and Federal Salary Act of 1967.

The increase of $11,381,000 programed in 1968 over the base amount appropriated in the Independent Offices and Department of Housing and Urban Development Appropriation Act is primarily for the acquisition of additional leased space for other departments and agencies during 1967, and the unabsorbed cost of pay increases cited above. Expanded space needs of other agencies are budgeted and financed initially by these expanding agencies through the first full fiscal year after acquisition. Thereafter, GSA is responsible for including these fixed requirements in its budget estimates. Approximately 45 percent, or $4,508,000 of the total leased space acquired during 1967, was within the Metropolitan District of Columbia area and was acquired to accommodate expanded activities and consolidations of various agencies.

Application of the $6,882,000 increase requested in 1969 is explained in the detailed estimates which follow.

APPROPRIATION LANGUAGE

"For necessary expenses, not otherwise provided for, of real property management and related activities as provided by law; rental of buildings in the District of Columbia; restoration of leased premises; moving Government agencies (including space adjustments) in connection with the assignment, allocation, and transfer of building space; acquisition by purchase or otherwise of real estate and interests therein; and contractual services incident to cleaning or servicing buildings and moving; [$260,500,000] *$278,763,000: Provided*, That this appropriation shall be available to provide such fencing, lighting, guard booths, and other facilities on private or other property not in Government ownership or control as may be appropriate to enable the United States Secret Service to perform its protective functions pursuant to title 18, U.S.C. 3056."

1. BUILDINGS MANAGEMENT

1968	$262,467,000
Change	+5,912,900
1969	268,379,900

Average employment.—All employment shown under "Buildings management fund."

HIGHLIGHT

"This activity provides for rental, operation, protection, and utilization of Government-owned and leased space, as indicated in the following table (in thousands):

	"Average net square feet		
	1967 actual	1968 estimate	1969 estimate
Government-owned space	91,184	96,189	99,385
Leased space	30,953	32,132	31,172

"The net increase for 1969 of $5,913,000 over the comparable amounts for 1968 is composed of increases in operation and protection of Government-owned space, $6,782,000 and; $300,000 for moving, alterations, and related costs, including procurement of furniture for offices of Members of Congress outside the District of Columbia; offset by reductions in rental, operation and protection of leased space, $1,169,000." (From the budget for 1969.)

The major portion of the OE, PBBS appropriation falls into the "Buildings management" activity and because of this, more employment is involved than in any other function of GSA. The following table shows that we have held the increase in employment to less than half of the increase in workload since 1960.

	Fiscal year 1960	Fiscal year 1969	Percent increase
Average square feet of space managed	79,718,000	130,557,000	+64
Average employment	12,917	16,566	+28

The estimate for 1969 provides for initial occupancy of new buildings and converted space resulting from the public buildings construction and conversion of existing Government-owned facilities to replace inadequate and obsolete buildings and the release of rented quarters.

The buildings scheduled for completion during the budget year will result in the replacement of obsolete Government-owned and rented space having an operating and rental cost to GSA of $2.9 million during 1969, and to other agencies of approximately $1.8 million. In addition, these new buildings provide expansion space for Courts; Post Office; Housing and Urban Development; Treasury; and other agencies.

The present financing policies for leased space required departments and agencies to budget for all leased space acquired to house their expanded programs, through the first full fiscal year after acquisition.

The agencies reimburse GSA for any partial first-year cost and transfer funds to GSA for the first full fiscal year's cost. For this reason, we do not provide for agencies' leased expansion space acquired after July 1, 1967, in this estimate.

No provision has been made for wage board increases to be effected during 1969. Financing for these costs will be requested in supplemental estimates during 1969.

The increase of $5,912,900 is requested primarily to provide for the management and operation of newly constructed buildings. Of the total $268 million requested under this activity 60 percent is to cover the cost of fixed obligations for rents, electricity, fuel, and other utilities, service constracts, and building supplies and materials.

Under this appropriation request GSA will be able to continue its current level of cleaning only by continued improvement in manpower utilization. As the Congress has been informed before, even this level is well below that considered acceptable in commercial building operations.

The stretchout of the new building construction program has had a marked effect on our application of resources for operating space. In the budget estimates we have projected occupancy schedules for new buildings in recent years while at the same time offering significant dollar reductions due to release of rented space. When the actual occupancy of new buildings is delayed, retention of the rented space is required. The additional cost of leases remaining in effect must then be absorbed within appropriated amounts and causes the further reduction in the levels of cleaning and other building services.

The total budget request for this activity contemplates achieving cost reductions of $0.8 million due to use of automatic equipment controls and systems, use of excess operating equipment and materials, and savings in personnel through workload surveys and consolidation and realinement of field and area offices.

We would like to emphasize that GSA has held the cleaning standards for all space under our control to the very minimum in our effort to avoid expenditures wherever possible. This is true both in space cleaned by our own employees and in that space for which we contract for cleaning services. Of the total space for which GSA has cleaning responsibility, 147.5 million square feet is currently cleaned by Government employees while the balance of 11.4 million square feet is cleaned by contractual arrangements.

JUSTIFICATION

(a) Operation and protection of Government-owned space, +$6,782,400

	Average net sq. ft.	Unit cost	Annual cost
1968 program	96,189,000	$1.458	$140,232,000
CHANGES FISCAL YEAR 1969			
Funds required to service 3,695,000 average net sq. ft. of space in new buildings being completed in 1968 and 1969			+6,290,000
Reduction in cost due to disposal of 308,000 average sq. ft. of Government-owned space as the result of new buildings being completed: Old Post Office, St. Albans, Vt., 3,500; 45 Broadway, New York, N.Y., 49,000; Post Office and Courthouse, Tuscaloosa, Ala., 10,800; Don Ce Sar Bldg., St. Petersburg, Fla., 30,800; Federal Bldg., Athens, Ga., 4,300; 830 and 1405 West Broadway, Louisville, Ky., 150,700; Federal Bldg., Des Moines, Iowa, 26,000; and Courts Bldg., St. Paul, Minn., 32,900			−535,000
Increased consumption of electricity due to additional electrical equipment used by Federal agencies, as well as improved lighting and new air conditioning equipment installed in Government-owned buildings. The increase of 1.8 percent requested in total electricity cost in 1969 over 1968 is considerably less than our actual experience factor of 4 percent average annual increase over the past 4 years			+400,000
Transfer to Post Office Department of 191,000 average net sq. ft. of space for operation and maintenance of U.S. Post Office and Courthouse, St. Paul, Minn			−305,000
Additional requirements in 1969 to fund full-year cost of classified salary rate increase approved in 1967			+359,400
Additional requirement in 1969 to fund full-year cost of wage board rate increases effected in 1968			+1,420,000
Reduction scheduled in 1969 due to cost reduction program through the extended use of automatic controls and systems, utilization of excess operating materials and, equipment and savings in personnel through workload surveys and consolidation and realinement of field and area offices			−847,000
Total changes in 1969			+6,782,400
1969 budget	99,385,000	1.479	147,014,400

(b) Rental, operation, and protection of leased space, $1,169,500

	Average net sq. ft.	Unit cost	Annual cost
1968 program	32,132,000	$3.695	$118,735,000
CHANGES FISCAL YEAR 1969			
Reduction of 960,000 average net sq. ft. of rented space to be released due to completion of new buildings			−2,345,000
Increased rental costs under succeeding leases at increased rental rates representing an increase of 0.8 percent of total rental cost in 1969 over 1968 as compared to an experience factor of 1.2 percent over the past 4 years			+820,000
Increased consumption of electricity resulting from additional electrical equipment required by Federal agencies			+100,000
Additional requirements in 1969 to fund full-year cost of classified salary rate increases approved in 1967			+54,100
Additional requirement in 1969 to fund full-year cost of wage board rate increases effected in 1968			+201,400
Total changes in 1969			−1,169,500
1969 budget	31,172,000	3.772	117,565,500

SUMMARY OF SPACE CHANGES

	Average square feet	Cost
Increases: Government-owned, new buildings	3,695,000	$6,290,000
Total increases	3,695,000	6,290,000
Decreases:		
Government-owned space	499,000	840,000
Leased space	960,000	2,345,000
Total decreases	1,459,000	3,185,000
Net change	+2,236,000	+3,105,000

In addition to the release of 1,459,000 square feet of space funded under this activity, 638,000 average square feet of space costing $1,800,000 heretofore funded by other agencies will also be released due, primarily, to availability of new Government-owned space. The principal agencies benefiting are Housing and Urban Development (281,000 square feet), Health, Education, and Welfare (100,000 square feet), Post Office (91,000 square feet), Agriculture (61,000 square feet), Defense (38,000 square feet), and other agencies (67,000 square feet).

(c) *Moving, alterations, and related costs*

	Annual cost
1968 program	$3,500,000
Changes in fiscal year 1969: Congressional furniture and furnishings	+300,000
1969 budget	3,800,000

The "Congressional furniture and furnishings" element provides for the acquisition of new and replacement furnishings and amortization of furniture and equipment utilized by Members of Congress in their home State and district offices. The increase of $300,000 in 1969 will defray the additional cost of $250,000 for new and replacement furnishings requested during the year and provides $50,000 to meet the increased amortization of furniture and equipment to be acquired in 1968 to fulfill congressional Members' needs.

The balance of the estimate in the subactivity provides $100,000 for continuation at the 1968 level of providing new and replacement furnishings in GSA-operated buildings; $320,000 for annual amortization of GSA and congressional furniture heretofore required; $1,498,000 for moving and space adjustment costs incident to GSA directed moves to effect improved space assignments and utilization; $402,000 for cafeteria equipment for seven new cafeteria installations and selected replacements in 112 existing installations; and $1,134,000 for moving and space adjustments incident to occupying 3,594,600 net square feet of space in 20 new buildings to be completed during 1969.

The following table reflects the workload, unit and performance costs by subactivities for 1967, 1968, and 1969 for the total program financed directly to GSA under this activity and reflects the requested net increase of $5,912,900 in 1969 over comparable amounts for 1968.

SUMMARY BY SUBACTIVITY SHOWING WORKLOAD UNIT COSTS, AND TOTAL COSTS FOR 1967, 1968, AND 1969

[All square footage is net]

Subactivity	1967			1968			1969			1969 increase over 1968
	Workload, average square foot	Unit cost	Total cost	Workload, average square foot	Unit cost	Total cost	Workload, average square foot	Unit cost	Total cost	
(a) Operating and protection of Government-owned space	91,184,000	$1.454	$132,547,072	96,189,000	$1.458	$140,232,000	99,385,000	$1.479	$147,014,400	+$6,782,400
Portion in the District of Columbia	22,016,000	1.534	33,772,400	22,480,500	1.541	34,641,000	23,119,000	1.575	36,402,700	+1,761,700
Portion outside the District of Columbia	69,168,000	1.428	98,774,672	73,708,500	1.433	105,591,000	76,266,000	1.450	110,611,700	+5,020,700
(b) Rental, operation, and protection of leased space	30,953,000	3.632	112,420,822	32,132,000	3.695	118,735,000	31,172,000	3.772	117,565,500	−1,169,500
Portion in the District of Columbia	4,365,000	4.756	20,760,000	4,860,000	4.753	23,050,000	4,826,000	4.765	22,996,400	−53,600
Portion outside the District of Columbia	26,588,000	3.448	91,670,822	27,272,000	3.509	95,685,000	26,346,000	3.590	94,569,100	−1,115,900
(c) Moving, alterations, and related costs			3,428,549			3,500,000			3,800,000	+300,000
Total cost or estimate			248,403,443			[1] 262,467,000			268,379,900	+5,912,900

[1] Includes proposed supplemental of $2,027,000 for wage board rate increases to be effected in 1968; includes proposed appropriation transfers of: $10,137,000 from other agencies in fiscal year 1968 for additional cost on an annual basis of space acquired in 1967, and on July 1, 1967.

Note: The unit costs for cleaning, protection, etc., for Government-owned and leased space supported by this activity of the OE–PBS appropriation are reflected in schedule B of the buildings management fund on pp. I–50 through I–52.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation.*—All personal services for this item are paid initially from the building management fund and accordingly are included under Other Services.

21 *Travel and transportation of persons.*—*$260,000* includes $245,000 for 9,074 days travel at $27 per day to provide adequate direction and supervision of building operations throughout the country and $15,000 for local public transportation costs.

23 *Rents and utilities services.*—*$370,000* for depreciation of administrative furniture and equipment payable to the general supply fund.

25 *Other services.*—*$267,347,900* for costs in connection with the buildings management activity except travel, office furniture and equipment. The initial charge for costs under this object is made in the building management fund and reimbursed from this appropriation.

31 *Equipment.*—*$402,000* to provide for the purchase of new and replacement equipment for cafeterias.

ABSORPTION OF PAY ACT INCREASES

Mr. EVINS. Were you able to absorb some of your pay act increases last year?

Mr. SCHMIDT. The total amount absorbed is in the amount of $1,429,600 in the Public Buildings Service.

Mr. EVINS. You were able to absorb $1,429,600 in 1968?

Mr. SCHMIDT. That is right.

Mr. EVINS. What about 1969?

Mr. SCHMIDT. That would be the absorption for 1969 as reflected in the base.

EFFECT OF REDUCTIONS UNDER PUBLIC LAW 90–218

Mr. EVINS. What was the effect of Public Law 90–218 on GSA?

How did it affect GSA, both as to public buildings management and GSA overall?

Mr. JOHNSON. On the total starting with GSA overall in the 1968 budget we anticipated an obligation program of $706.9 million, of which personal service costs were $80.8 million.

In our revised program carried in the 1969 budget, which gives effect to the 2 percent-10 percent, our total obligations without pay increases are now $579.1 million, for a reduction of 18.1 percent.

Our personal service obligations without pay increases are now $78.3 million, or a reduction of 3.1 percent.

Mr. EVINS. Did this adversely affect the service or the operation of the agency?

Mr. JOHNSON. Yes, sir; I would say it did.

Mr. EVINS. Your figures indicated that you took more than 2 percent—10 percent.

Mr. KNOTT. That is right.

Mr. JOHNSON. Mr. Chairman, we did not take more. Our pro rata share applied by the Bureau of the Budget was more.

Mr. EVINS. Well, this increase in space management, operating expense, is due to the Pay Act cost.

Mr. Reporter, place in the record I–25 through I–28.

(Documents referred to follow:)

2. Space Management

	Amount	Average employment		
		Central office	Field	Total
1968	$5,859,000	68	379	447
Change	+60,100	−1	−6	−7
Total 1969	5,919,100	67	373	440

HIGHLIGHT

"This activity provides for (*a*) review, analysis, and determination of Federal space requirements and the development of programs and projects; (*b*) acquisition of real property by lease, purchase, exchange, or donation, including the management of building sites pending construction; and (*c*) assignment and reassignment of Government owned and leased space." (From The Budget for 1969.)

Justification of the activity is presented under two subactivities summarized below:

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
a. Acquisition	$2,249,954	$2,318,000	$2,339,600
b. Planning and utilization	3,370,405	3,541,000	3,579,500
Total cost or estimate	5,620,359	5,859,000	5,919,100

GSA's Government-wide responsibility in space management requires continuous determination of general purpose space need on a nationwide basis and the acquisition of the required space by the leasing of private property and construction and alteration of public buildings. In executing this responsibility, real property specialists in the regional offices evaluate and determine overall space needs through surveys of Federal agency activities and devlop plans for the housing of agencies in the various communities across the Nation. They also evaluate individual agency requests for space, and take appropriate action to implement the plans and satisfy the request if valid, acquiring leased space when necessary. Efficient utilization of space in leased and Government-owned buildings is monitored and achieved by periodic inspections and surveys and by assisting agencies through the preparation of space layouts.

Potential sites for new buildings are identified and evaluated and when appropriate the privately owned land in the selected sites is acquired and managed until needed for construction of a public building.

All space management functions are directed by the central office through the development of policies and the issuance of standards and regulations concerning project selection and development, the selection, acquisition, and management of public building sites, and the assignment and utilization of space in buildings under GSA control.

There is no increase in staffing requested for this activity in 1969.

The total funding increase of $60,100 represents the additional amount required to meet full-year costs of the Federal Salary Act of 1967.

(*a*) *Acquisition*

1967	$2,249,954
1968	2,318,000
1969	2,339,600

Space management operations financed under this subactivity are charged with acquiring space which will adequately meet the needs of agencies in terms of economy, efficiency, and service with due regard to their program needs. The program includes technical and administrative work involving investigation and evaluation of potential sites for public buildings; selection and acquisition of fee

title to sites through direct purchase, condemnation, exchange, and donation; management of sites being held pending development by construction of a public building, and the acquisition of leasehold interests in privately owned buildings when federally owned space is not available to meet identified needs. Procurement of space adequate for efficient and economical use of the Federal agencies so as to provide a safe, healthful, and convenient environment for employees is an ever-expanding responsibility as agencies increase in number and size.

In addition, a continuing program is in operation to consolidate leases so as to reduce the overall number of contracts to be administered, eliminate duplication of agency support services, reduce space needs, and conserve rental funds. As shown in the table below, the total number of leases in effect during fiscal years 1965–67 has decreased while the area per lease has increased. It is expected that this trend will continue during fiscal years 1968 and 1969.

	June 30, 1964	June 30, 1965	June 30, 1966	June 30, 1967	June 30, 1968	June 30, 1969
Number of leases in effect	7,785	7,769	7,553	7,374	7,200	7,100
Area under lease (million square feet)	43.3	42.7	44.6	46.4	46.8	48.9
Average square feet per lease	5,535	5,496	5,905	6,292	6,700	6,900
Total annual rental obligation (in millions)	$115.2	$119.0	$131.2	$140.2	$150.0	$155.

Substantial expenditures of appropriated funds are being avoided by the transfer to GSA from other Federal agencies of excess land and buildings for use in their existing condition, or as sites for new public buildings. Cost avoidance is also gained by the acquisition of land for use as Federal building sites by exchange for surplus Government-owned real property. During the fiscal year ending June 30, 1966, six Government-owned properties, having a value of $24.6 million were transferred to GSA for further utilization. For the fiscal year ending June 30, 1967, five properties, valued at $8.9 million were transferred to GSA, and 24 properties, valued at $2.1 million were acquired by exchange for surplus Government-owned real property.

Every effort is made to outlease land and buildings acquired as sites for new Federal building projects pending their need for new construction. Revenues derived from this source result in a decrease in the overall cost of site management. In 1967 revenues derived from this source amounted to $717,037. It is estimated that in 1968 these revenues will be $500,000 and approximately the same amount in 1969.

ACQUISITION WORKLOAD

	1967	1968	1969
Number of leases in effect, June 30	7,374	7,200	7,100
Net assignable space under lease, June 30 (million square feet)	46.4	46.8	48.9
Number of parcels acquired:			
GSA construction programs	155	214	110
Other agency funds	91	162	115
Total parcels acquired	246	376	225

(b) Planning and utilization

1967	$3,370,405
1968	3,541,000
1969	3,579,500

Under this subactivity, Government-owned and leased space under the assignment control of GSA is assigned, reassigned, and utilized to house employees, material, and equipment of Federal agencies. Federal agency space requirements are identified and long-range plans and programs to satisfy these requirements

are developed. Space layout services are provided for all new buildings, new leased space, and in existing space. It is also the responsibility of this function to enforce prudent space utilization practices; develop and publish space quantity and quality standards; and provide technical advice and assistance to other GSA organizations, other Federal agencies, and other entities such as State and foreign governments, universities, libraries, etc.

Floor and assignment plans are prepared and updated for leased and federally owned space in the GSA inventory. These plans provide an essential tool in the continuing effort to assure efficient utilization of space by the agencies housed by GSA, and are also a prime source of data for a variety of architectural and engineering functions performed by the Public Buildings Service.

In an effort to minimize the rate at which the space inventory is growing, there is constant surveillance by utilization specialists of space requests submitted to GSA by other agencies. In fiscal year 1967, approximately 5,200 requests totaling 24,855,280 square feet of new and replacement space were received. Reviews to determine minimum needs resulted in a reduction of 740,000 square feet from these requests. During the same fiscal year, inspections and surveys of existing assignments resulted in a reduction of 121,700 square feet of space previously assigned, permitting reassignment of the excess space to meet other needs. About 25 percent of this space (30,500 square feet) was leased and its recapture permitted cancellation of 32 leases with an annual rental of slightly less than $110,500.

Through emphasis on obtaining more intensive utilization of space under GSA control, the average amount of office space assigned to Federal employees was reduced from 138.3 square feet per person in 1966 to 134.6 square feet in 1967. Calculated on the basis of the national average square foot cost of office space leased by GSA during 1967 and the number of Federal employees housed by GSA as of June 30, 1967, this reduction of 3.7 square feet in the utilization occupancy rate represents a recurring cost avoidance of approximately $7.5 million annually.

WORKLOAD

	1967	1968	1969
Net area under assignment responsibility, June 30 (million square feet):			
Office space	79.1	81.4	83.6
Storage space	76.8	80.2	83.2
Special space	46.0	47.9	48.5
Total	201.9	209.5	215.3
Employees housed:			
Office space	570,551	594,800	615,800
Storage space	16,021	16,800	17,700
Special space	137,597	144,500	151,700
	724,169	756,100	785,200
Communities surveyed	352	300	500

Of the workload increase of 5.8 million square feet over 1968, approximately 3.2 million represents new construction requiring detailed review of construction plans for new buildings to ensure responsiveness to utilization standards and preoccupancy layouts of the occupying agencies. Space layouts are also required in existing buildings being backfilled as a result of moves to new buildings or involving the reassignment of space.

DESIGN AND CONSTRUCTION, OPERATING EXPENSE

Mr. EVINS. We have operating expense for design and construction. This is $904,300 up over last year.

Tell us, Mr. Commissioner, why these costs go up.

Is it the same answer as far as the Pay Act increase?

Mr. SCHMIDT. A small part of that is for Pay Act cost, $42,800; but the major item is $500,000 for completing the closing out of construction projects for GSA and other agencies.

Heretofore these costs have been spread through the hundreds of project appropriations.

The purpose of this item is to move it into operating expense, since it is a continuing item so long as we have substantial ongoing programs of construction, $131,500 is for personnel performing investigative services under the Civil Rights Act, and $220,000 is for investigation of new construction methods and systems.

CONTRACTOR'S CLAIMS

Mr. BOLAND. What are most of the contractors' claims, that you talk about under I–32?

The State Department was completed in 1960, yet the contractor is claiming $2 million is still pending.

What are the reasons for these claims?

Mr. SCHMIDT. These are cases where they take issue with the contracting officer's decision, and his decision being final, it is reviewed by the GSA Board of Contract Appeals, and if not settled then it goes to the Court of Claims.

Mr. BOLAND. You have many of your cases going to the Board of Contract Appeals?

Mr. SCHMIDT. Oh, I would say a substantial number.

Mr. KNOTT. They carry a load of about 250 cases and they run about 50–50 between Federal supply and design and construction.

NATURE OF INVESTIGATION OF NEW CONSTRUCTION METHODS

Mr. EVINS. Mr. Schmidt, what is the nature of the investigations that you point out on page I–32? You say $220,000 for investigation of new construction methods and systems.

Mr. SCHMIDT. The new construction methods we have selected projects what we would like to do in 1969. One of the investigations is induced by violations in the buildings, investigations of seismic forces in steel buildings, feasibility studies for developing construction specifications which are more uniform with those of private industry and the research of current architectural design data, and updating of standard design detail in handbooks and research in current mechanical, electrical and updating our design criteria and also an investigation of effect of physical environment on employees' productivity.

Mr. KNOTT. We want to be sure our specification and design standards are updated.

A number of these projects will be done in conjunction with industry.

FEASIBILITY STUDY

Mr. EVINS. What is the nature of your feasibility study?

Mr. SCHMIDT. Over the years there is always criticism of the Government specifications being custom-tailored, and we are having these examined through the study of a number of buildings we have built. We want to be sure that what we are requiring on the marketplace ties in very well with private industry.

PHYSICAL ENVIRONMENT/EMPLOYEE PRODUCTIVITY INVESTIGATION

Mr. EVINS. My general impression is that your Federal buildings are attractive and they do credit to the Federal Government.

You investigate on the effect of the physical environment on employee's productivity. How do you do this?

Mr. SCHMIDT. Actually, Mr. Chairman, this relates primarily to the use of open space. If we can use open space in buildings, avoiding the use of partitions through creating the proper environment, we can save considerable money, both in moves down the years, during the period that the building is in use as well as in the initial cost, by not having to provide thousands of linear feet of partitioning in order to lay out individual offices.

Mr. BOLAND. That should be an interesting study. A good number of the new buildings in private business do use partitions.

Mr. SCHMIDT. In some of our buildings we feel they are overpartitioned, but it is a matter that the agencies insist on, and we think there is a good deal of merit in using more open space. This will be centered around the Department of Labor Building. They are concerned about windowless space and the proper environmental arrangements. Every employee will have at least a vision of a window. I am not saying he can look out the window, but he will have a window in view.

CENTRAL BUILDING TO HOUSE INDEPENDENT AGENCIES

Mr. TALCOTT. Has GSA ever given any thought to building a central building to house a number of separate, independent agencies for the purpose of consolidating facilities, like computers and telephones and garages and storage, and many other facilities that have mutual uses?

Mr. KNOTT. We try to build space so that it can be used by any agency.

Mr. TALCOTT. A central building for many of the independent agencies rather than having them scattered all around.

Mr. KNOTT. For regulatory agencies, for example. In our plans, and this has been authorized but not funded, we are asking for part of the money for planning this year in this budget.

The Federal triangle, which was started in the 1930's has never been completed, as you know, and when the Department of Labor moves out, this is going to open up an area that, coupled with the demolition of two old buildings and the expansion that we plan in that area, we propose to consolidate the regulatory agencies in that area.

This would be the type of agency we would put there.

EXAMPLE OF CENTRAL FACILITY

Mr. SCHMIDT. I think the Cleveland building is a good example of a central Federal office building. It has almost 6,000 employees, with 50-some-odd agencies housed in this one building, a single medical facility to serve all the agencies, a retail store to serve all the agencies, consolidated as much as possible to serve the entire complement of agencies within the area.

Mr. TALCOTT. Consolidation of computers and even garage and storage space?

Mr. SCHMIDT. That is right.

JUSTIFICATION MATERIAL

Mr. EVINS. We will insert the other pertinent justification material on your operating expenses, PBS.

(The information follows:)

3. DESIGN AND CONSTRUCTION

1968	$1,112,900
Change	+904,300
1969	2,017,200

Average employment.—All employment shown under "Construction services fund."

HIGHLIGHT

"This activity provides for overall direction of programs involving design, construction, and remodeling of Federal buildings. The net increase of $904,000 over a comparable amount for 1968 is primarily for adjudication of contract appeals and claims, and investigtion of complaints under the Civil Rights Act of 1964." (From the budget for 1969.)

Total cost or estimate

1967	$1,403,621
1968	1,112,900
1969	2,017,200

JUSTIFICATION

Overall technical direction is provided for design, construction, and alteration of Federal buildings, including projects financed with funds transferred from other Government agencies. Services consist of (*a*) architectural and engineering planning, including investigation of improved methods and systems; (*b*) preparation of feasibility studies and cost estimates for proposed building projects and programs for other Government agencies; (*c*) providing professional assistance in adjudicating contractors' claims arising after construction projects have been completed; (*d*) development and maintenance of design and construction handbooks, standard details and stock specifications; and (*e*) liaison with professional groups, Federal committees and Boards and others dealing with building design and construction.

This activity provides financing for salaries and related expenses of central and regional office employees engaged in the overall direction of building construction and alteration programs. In addition, it funds the salaries and related expenses of employees engaged in the preparation of feasibility studies and cost estimates for other Government agencies for their use in support of appropriations for design and construction of specific projects; the development of technical material utilized in the preparation of standard specifications, bidding documents, and contracts for construction and repair work performed for other agencies; investigative services to met GSA's responsibilities under the Civil Rights Act of 1964; and assistance to other agencies and to GSA in defending

the Government's position against contractors for claims arising out of construction projects.

The actual cost for 1967 included a number of non-recurring items such as updating the handbook for design of U.S. Courts quarters, simplification of construction specifications, study of electric substation design criteria, a feasibility study to determine the best use of the Pension Building, Washington, D.C., and a comprehensive study of the GSA construction program.

On December 31, 1967, the total design, construction, and alteration workload for which this activity has overall direction was as follows:

	Number of projects	Estimated improvement cost (millions)
Under design:		
GSA projects	440	$655.0
Sites and expenses	55	508.4
Repair and improvement	385	146.6
Other agency projects	216	246.7
New construction	63	215.3
Repairs and alterations	153	31.4
Total design workload	656	901.7
Under construction:		
GSA projects	125	316.0
Construction	47	286.1
Repair and improvement	78	29.9
Other agency projects	218	196.7
New construction	32	155.6
Repairs and alterations	186	41.1
Total construction workload	343	512.7

The increase of $904,300 in 1969 over 1968 includes $500,000 for closing completed construction projects of GSA and other agencies; $131,500 for personnel performing investigative services under the Civil Rights Act of 1964; $220,000 for investigation of new construction methods and systems; $42,800 for full-year cost of 1967 Pay Act; and $10,000 for travel incident to compliance investigations and closing of completed construction projects.

Costs associated with closing out construction projects of GSA and other agencies after physical completion and occupancy, involving contractor claims, change orders, etc., are currently being funded through the construction services fund and distributed to all active projects. As a result, a number of projects are assessed a pro rata share of these costs even though they are not involved in any closing costs. For example, the extension and remodeling of the State Department Building in Washington, D.C. was completed in 1960, yet a contractor's claim of over $2 million is still pending. Likewise, the Century 21 Project at Seattle, Wash., was completed in 1962 and the contractor's claim is still being adjudicated. The headquarters building for the CIA at Langley, Va. was completed in 1962, yet the contractor's final claim was not paid until September 1967. The CT FOB in San Francisco was completed and occupied in 1964, yet numerous claims are still pending against this project. Since the cost of processing these claims, including travel incident thereto, is an overhead type cost incurred after the project is completed and occupied, and project funds may have been exhausted, it is believed these costs are a proper charge against operating expenses, under this activity, particularly since many of the claims involve projects funded by other agencies.

Likewise, personnel performing investigative services under the Civil Rights Act of 1964 incident to construction projects are now being funded from the Construction Services Fund and their cost distributed to all active projects, since it is impracticable to charge their time to specific projects. As a result, a number of projects are assessed a pro rata share of these costs even though the services performed had nothing to do with the projects receiving the charge. Since these are also overhead type charges, they should be funded from this activity, particularly since many of the investigations involve projects funded by other agencies.

The $220,000 requested for investigation of new construction methods and systems is required for the following:

Investigation of induced vibration in buildings.

Investigation of seismic forces in steel buildings.

Feasibility study for developing construction specifications which are more uniform with those of private industry.

Research of current architectural design data and updating of related standard details and handbooks.

Research in current mechanical and electrical design technology and updating GSA design criteria.

Investigation of the effect of physical environment on employee productivity.

The employees funded under this activity, and all other employees engaged in design and construction operations, are paid initially from the Construction Services Fund. Salaries and related expenses of technical and administrative personnel engaged directly on approved work programs and projects are reimbursable to the Construction Services Fund from funds provided for such construction programs and projects.

4. Service Direction

	Amount	Average employment		
		Central office	Field	Total
1968	$1,516,100	50	51	101
Change	+15,700	−1	−1	−2
Total, 1969	1,531,800	49	50	99

JUSTIFICATION

General direction, short- and long-range planning, and administration of all programs assigned to the Public Buildings Service are provided in the central office by the Commissioner and an executive staff, and in the regions by 10 regional directors with limited executive assistance. The central office also possesses limited specialized capabilities in program planning and evaluation and management information systems. Postage fees totaling $25,000 are included, representing the amount chargeable to all activities under this appropriation, except buildings management.

The minor increase of $15,700 is wholly attributable to the salary act of 1967.

	1967	1968	1969
General supervision	$1,180,296	$1,491,100	$1,506,800
Postage fees	45,000	25,000	25,000
Total cost or estimate	1,225,296	1,516,100	1,531,800

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$1,250,200 for 104 positions, distributed as follows:

	1967	1968	1969
Central office	48.0	51	51
Field offices	49.0	53	53
Total positions	97.0	104	104
Average employment	86.8	101	99

12 *Personnel benefits.*—$100,000, includes $81,300 for retirement contributions, $12,100 for health benefits, $4,600 for group insurance, as required by law in support of the above personnel, $1,000 for employees compensation fund, and $1,000 for payments under the Federal Insurance Contribution Act.

21 *Travel and transportation of persons.*—$19,100, includes $17,200 for 600 days travel and $1,900 for motor pool services. These amounts provide for travel performed by the Commissioner, Deputy Commissioner, and 10 regional directors in the overall direction and administration of all programs and projects assigned to the Public Buildings Service.

22 *Transportation of things.*—$3,100, for transportation of general purposes printed material to 10 regional offices.

23 *Rent, communications, and utilities.*—$68,300, includes $25,000 postage fees for the OE, PBS activities except buildings management, $38,200 for payments to the Federal telecommunications fund for telephone and teletype service, and $5,100 for depreciation of administrative furniture and equipment.

24 *Printing and reproduction.*—$5,700, for cost of printing common-use GSA forms, letterheads, envelopes, and directories, and the reproduction of memoranda, letters, documents, and issuances required in the daily prosecution of the total PBS program at the Commissioner's level.

25 *Other services.*—$80,100, provides $58,000 to reimburse NARS for personnel assigned to PBS management information systems studies and $22,100 for health room services, security clearances for new employees, payments to the working capital fund, and other miscellaneous costs.

26 *Supplies and materials.*—$5,300, provides day-to-day administrative supplies which includes plain stationery, carbon paper, typewriter and adding machine ribbons, file folders, etc.

5. Administrative Operations

HIGHLIGHT

This activity provides for administrative and staff support for real property activities that relate to the entire Public Buildings Service with specific relationship to its regulatory and space management functions. These are support costs that cannot be directly identified with the repair and improvement, buildings management and construction programs of the Public Buildings Service.

The services described below are performed for the agency as a whole on a centralized and integrated basis and are funded by deposits or reimbursements from program appropriations and funds to which services are provided. Administrative operations supports the above described real property activities as follows:

1. *Administration.*—Provides accounting and reporting, credit, insurance and related financial services, budget, personnel administration, management systems, audits, investigative services, and administrative and office services.

2. *Legal services.*—Performs all legal services in connection with the management and maintenance of federally owned and leased buildings.

JUSTIFICATION

The costs of AO support for all direct PBS activities (excluding buildings management activity which goes through the BM fund) is compared in its direct percentage relationship to the program total and comparative man-year equivalents as follows:

[Dollar amounts in thousands]

	1967	1968	1969
Program total for direct activities	$9,130	$9,414	$10,428
Administrative support	$880	$926	$915
Percent relationship	9.6	9.8	8.8
Man-year equivalents	70.1	71.3	69.2

AO support in relationship to program cost reflects a reduction in 1969 from 9.8 to 8.8 percent involving less funding in 1969 in spite of increased salary costs. Typical administrative support is indicated by the following selected measurable statistics:

SELECTED WORKLOAD STATISTICS

	1967	1968	1969
Vouchers processed	16,717	17,000	17,000
Billings prepared	178	200	200
Accounting documents processed	16,895	17,200	17,200
Personnel serviced and employees payrolled	529	548	539
Audits performed:			
Internal	14	15	17
Contract	13	14	16
Inspections		1	2
Investigative cases	33	20	22
Civil rights cases	27	30	40

In addition to these volumes, other significant staff support for PBS (general) is provided in (1) planning and coordinating the development of Government-wide and agency-wide policy and procedures incorporated in the Federal procurement regulations, (2) providing mail, messenger, travel, library issuances and forms, property, and supply services, (3) assistance in the development of organizational and operating relationships and management systems, and (4) (*a*) legal review of legislation proposed by GSA and other agencies, (*b*) representation before GSA Board of Contract Appeals, and (*c*) claims by or against the Government involving PBS programs.

Total AO fund support on an integrated basis for all GSA programs is justified under the heading "Administration operations" in volume III of GSA's congressional estimates.

Buildings Management Fund

Mr. Evins. Let's turn over to the "Buildings management fund." That is I–47.

Operating costs for 1969 are estimated to be $431.7 million, a net increase of $7.8 million over 1968, mainly due to additional Government-owned space to be serviced.

Mr. Knott. It is due to more space that we servicing.

Mr. Evins. Place in the record I–47, I–48, and I–49.

(Documents follow:)

GENERAL STATEMENT

This fund finances on a reimbursable basis, buildings management activities consisting of: Management, rental, operation, and protection of Government-owned and leased space in and outside the District of Columbia for housing Federal agencies; modernization and recurring repairs to Government-owned space under jurisdiction of General Services Administration; protection and maintenance of excess and surplus properties; maintenance of sites acquired for future construction of Federal buildings; uniforms and uniform allowances; and other related building services (66 Stat. 594). Retained earnings resulting from operations, after making provision for prior year losses, if any, are paid into the Treasury as miscellaneous receipts.

Operating costs for 1969 are estimated at $431.7 million, a net increase of $7.8 million over 1968, mainly due to additional Government-owned space to be serviced.

1. *Buildings management—(a) Operation and protection of Government-owned space.*—Provides for operation and protection of an average of 155.7 million square feet of space in 1969 compared to an average of 151.5 million square feet in 1968 and an average of 145.3 million square feet in 1967. The change from 1968 reflects net additional space to be serviced due to construction of new buildings, and certain buildings being transferred to GSA for operation and protection.

(*b*) *Rental, operation, and protection of leased space.*—Provides for an average of 46.1 million square feet in 1969 compared to an average of 46.7 million square feet in 1968 and an average of 45.6 million square feet in 1967, based on currently projected requirements of Federal agencies.

2. *Moving, alterations, and related costs.*—Provides for moving and related alterations based on experience factors of buildings management operations and for moving and space adjustments incident to the new construction program.

3. *Protection and maintenance, surplus properties.*—Provides for protection and maintenance of excess and surplus properties.

4. *Maintenance repairs.*—Provides for day-to-day maintenance of GSA operated buildings, and other Government buildings under jurisdiction of GSA.

5. *Security and special guarding.*—Provides security and above normal guarding service required by other agencies.

6. *Operation and maintenance of sites held for future construction.*—Provides for maintenance of sites acquired for future construction of Federal buildings and repairs to improvements located thereon.

7. *Job order work.*—Provides for special services and repairs and improvements to buildings for GSA and other agencies.

8. *Other.*—Provides for program supervision of repair and improvement operations as distinguished from architectural and design activities initially financed from the construction services fund, utility services furnished in the District of Columbia to buildings operated by other agencies and utilities to concessionaires.

Operating results and financial condition.—At the end of 1967, the net investment in the fund was $3.7 million, composed of $3.5 million appropriated, $7.9 million capitalized assets, $0.3 million retained earnings, less $8 million provision for unfunded leave liability." (From the budget for 1969.)

There follow summary statements of buildings management income and expense by source of financing.

BUILDINGS MANAGEMENT FUND, GENERAL SERVICES ADMINISTRATION

Schedule A. Supplementary Analysis of Income for 1967 by source

GSA APPROPRIATIONS	
Operating expenses, PBS	$245,707,470
Repair and improvement	21,346,819
Operating expenses, FSS	5,782,169
Strategic and critical materials	4,078,330
General supply fund	777,962
Consolidated working fund—DMS	970,344
Operating expenses, NARS	504,302
Additional court facilities	274,209
Expenses, U.S. court facilities	126,733
Minor amounts from other GSA funds	183,478
Income from GSA Appropriations	279,751,816
INCOME FROM OTHER AGENCIES	
Executive Office of the President	3,915,415
Judiciary	147,490
Legislative	274,088
Department of Agriculture	5,208,387
Department of Commerce	2,105,842
Department of Defense	15,060,242
Department of Health, Education, and Welfare	23,619,243
Department of Urban Development	4,591,712
Department of the Interior	4,149,918
Department of Justice	714,935
Department of Labor	821,155
Post Office Department	46,071,100
Department of State	745,331
Department of Transportation	5,317,276
Department of the Treasury	3,771,023

Schedule A. Supplementary Analysis of Income for 1967 by source—Continued

INDEPENDENT AGENCIES AND OTHERS

Agency for International Development	$437,642
Atomic Energy Commission	1,684,044
Civil Service Commission	618,902
District of Columbia	452,516
Export Import Bank of Washington	159,986
Federal Deposit Insurance Corp	341,246
Federal Home Loan Bank	310,812
National Aeronautics and Space Administration	1,006,034
National Capital Housing Authority	1,281,739
Railroad Retirement Board	650,216
Selective Service System	174,249
Small Business Administration	406,930
Smithsonian Institution	319,872
U.S. Information Agency	410,441
Veterans' Administration	606,651
Minor amounts from other agencies and sources	3,532,430
Income from other agencies	128,906,867
Subtotal	408,658,683
Other income	1,204,210
Total BMF Revenue and Other receipts, 1967	409,862,893

Repair and Improvement of Public Buildings

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	Operating costs, funded:			
	1. Maintenance repairs	25,935	28,226	28,945
	2. Repairs and improvements	35,178	41,392	26,788
	3. Conversions and extensions	3,460	2,845	6,332
	4. Program direction	2,288	2,397	2,400
	5. Administrative operations	890	926	986
	Total operating costs, funded	67,751	75,786	65,451
	Capital outlay:			
	2. Repairs and improvements	7,368	10,500	13,300
	3. Conversions and extensions	2,372	3,500	6,800
	Total capital outlay	9,740	14,000	20,100
	Total program costs, funded	77,491	89,786	85,551
	Change in selected resources [1]	−8,816	214	−2,132
10	Total obligations	68,675	90,000	83,419
	Financing:			
17	Recovery of prior year obligations	−791	−800	
21	Unobligated balance available, start of year	−503	−12,619	−3,419
24	Unobligated balance available, end of year	12,619	3,419	
40	New obligational authority (appropriation)	80,000	80,000	80,000
	Relation of obligations to expenditures:			
10	Total obligations	68,675	90,000	83,419
70	Receipts and other offsets (items 11 to 17)	−791	−800	
71	Obligations affecting expenditures	67,884	89,200	83,419
72	Obligated balance, start of year	45,345	32,573	34,173
74	Obligated balance, end of year	−32,573	−34,173	−30,592
90	Expenditures	80,656	87,600	87,000
	Expenditures are distributed as follows:			
01	Out of current authorizations	80,656	52,600	54,000
02	Out of prior authorizations		35,000	33,000

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $37,000,000 (1967 adjustments, −$791,000; 1967, $27,393,000; 1968, $27,607,000; 1969, $25,475,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	GENERAL SERVICES ADMINISTRATION			
21.0	Travel and transportation of persons	291	425	425
	Payment to interagency motor pools	37	75	75
22.0	Transportation of things	5	10	10
23.0	Rent, communications, and utilities	161	160	160
24.0	Printing and reproduction	272	325	325
25.1	Other services	31,174	50,324	29,033
25.2	Services of other agencies	3	3	3
25.3	Payment to buildings management fund	21,687	21,528	22,038
	Payment to construction services fund	6,777	6,500	6,500
26.0	Supplies and materials	236	265	265
31.0	Equipment	48	50	50
32.0	Lands and structures	7,949	10,000	22,000
42.0	Insurance claims and indemnities	33	35	35
	Total obligations, General Services Administration	68,675	89,700	80,919
	ALLOCATION TO CORPS OF ENGINEERS			
25.2	Services of other agencies		300	2,500
99.0	Total obligations	68,675	90,000	83,419

Mr. EVINS. Turn over to repair and improvement.

You had an appropriation last year of $80 million and you are asking for $80 million; is that right, Mr. Administrator?

Mr. KNOTT. That is right.

Mr. EVINS. In addition to your appropriation you had an unobligated balance of $12.619 million in 1968, you recovered from prior years $779,840, and you had a reduction of a balance carried forward of $3 million, and this gave you a budget of $90 million for repairs last year.

Mr. JOHNSON. That is right.

We have an obligational program of $90 million with an appropriation of $80 million. This is a no-year appropriation and if we cannot get the work done by June 30, we can get it done the next month.

What this means is that our level, our obligational level in 1969 will be less than it was in 1968, yet the appropriation is equal.

CHANGES IN PROGRAM

Mr. EVINS. Increased in 1969 are maintenance repairs, extensions and conversions, and administrative operations.

Decreases in 1969 are said to be $15 million, and you come out with an estimate of $80 million for 1969.

The estimate proposes the funding of extension projects. They built a building which is too small and they need some extension, so you have to make these repairs.

The estimate of $80 million holds new funding to the last year appropriation level.

Do you submit to the appropriate committees of Congress every request for an extension?

Mr. KNOTT. If it is over $200,000.

Mr. BOLAND. Are you doing it?

Mr. KNOTT. Yes; we just got clearance from the Bureau of the Budget today on some items. That will be going to the Congress in the next week.

LEVEL OF EXPENDITURES

Mr. BOLAND. Let me ask a question here, Mr. Chairman.

What has been the level of expenditure in this activity over the past few years?

What was it in 1967 and what was it in 1965?

Mr. KNOTT. It has been running in the $80 million to $90 million frame. It has been as high as $90 million.

Mr. BOLAND. Is this sufficient to do the job that has to be done?

We have had hearings, as you know, in the past which indicated that the deterioration of some of the buildings becomes rather substantial if improvement is not carried out.

Mr. KNOTT. A couple of years ago we were using a figure of $52 million for accrued obsolescence in the buildings we were managing at that time—well, obviously, we are taking on more space and, while some of it is new space the accrued obsolescence is increasing and we know that we are getting behind again.

We have a projection for increases, and in my statement I said that it was not enough to keep up with it, and that I hoped that we would be able in future years to increase it. On page 60 we have projected what that increase in our judgment ought to be, at the bottom of the page. That gives you that figure you just asked for, by the way; 1965 obligations were $90.7 million and we dropped to $68.7 million in 1967.

REPAIR AND IMPROVEMENT PROGRAM

Mr. EVINS. Take a look at the table on page I–59, repair and improvement program.

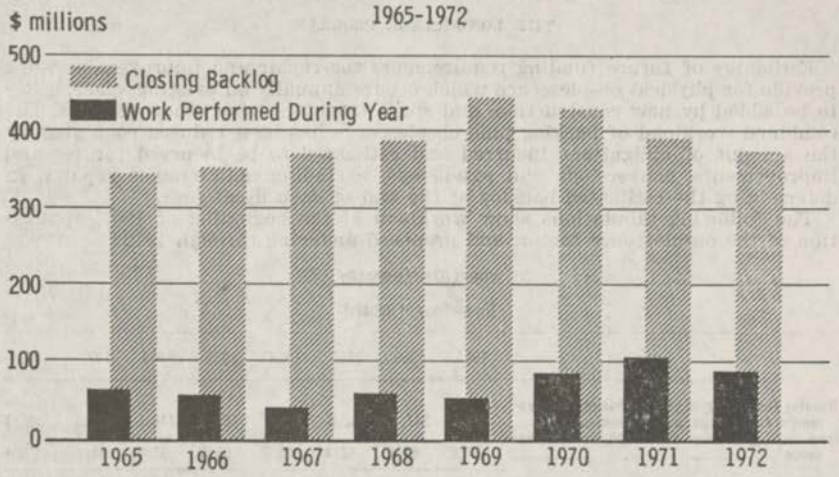
Mr. Reporter, place that in the record.

(The page follows:)

REPAIR AND IMPROVEMENT PROGRAM

WORKLOAD-OBLIGATIONS-BACKLOG

1965-1972



(IN MILLIONS)

Fiscal Year	Net Sq. Ft. Workload	Opening Backlog	New Work Generated	Work Performed	Closing Backlog
1965	163.7	354.1	57.6	64.6	347.1
1966	173.4	347.1	60.5	57.0	350.6
1967	177.6	350.6	62.4	40.0	373.0
1968	183.9	373.0	65.0	58.2	379.8
1969	187.9	432.7*	66.6	51.2	448.1
1970	190.0	448.1	67.4	86.2	429.3
1971	193.7	429.3	68.8	105.7	392.4
1972	198.0	392.4	70.4	87.0	375.8

WORKLOAD increases due to
1. Completion of Buildings Under Construction.
2. Transfer of Buildings from other Agencies

NEW WORK GENERATED
Physical obsolescence computed at $0.41 per net sq. ft. for general office-type space and $0.16 for warehouse-type space.

BACKLOG
Work in 1969 is limited only to most urgent projects; the backlog therefor will not be reduced due to accretion of new work. Net reductions of total backlog are proposed in 1970, 1971 and 1972, contingent upon increased appropriations.

*Backlog at beginning of 1969 increased by $52.9 million due to transfer of extension projects from new construction to R&I.

Mr. EVINS. It shows graphically a closing of the backlog somewhat. Place in the record also, Mr. Reporter, I–60, 61, and 62. (Documents follow:)

THE LONG-RANGE PROGRAM

Estimates of future funding requirements for repair and improvement work provide for physical obsolescence which occurs annually on existing space, space to be added by new construction, and space transfers from other agencies. The combined workload of backlog plus obsolescence has been reduced each year by the amount of obligations incurred and estimated to be incurred for repairs, improvements, conversions and extensions, excluding maintenance repairs, in determining the estimated backlog at the end of each fiscal year.

The following tabulations show workload at the beginning of 1965, application of the obsolescence factor, and proposed financing through 1972:

WORKLOAD SUMMARY

[In millions of dollars]

	1965	1966	1967	1968	1969	1970	1971	1972
Backlog (beginning of year): Repairs, improvements, conversions, and extensions	354.1	347.1	350.6	373.0	[2] 432.7	448.1	429.3	392.4
New work generated due to physical obsolescence [1]	57.6	60.5	62.4	65.0	66.6	67.4	68.8	70.4
Total workload	411.7	407.6	413.0	438.0	499.3	515.5	498.1	462.8
Work performed during year	64.6	57.0	40.0	58.2	51.2	86.2	105.7	87.0
Estimated backlog (end of year)	347.1	350.6	373.0	379.8	448.1	429.3	392.4	375.8

[1] Backlog beginning of 1969 increased by $52.9 million due to transfer of extension projects from new construction to R&I.

[2] Obsolescence factor: 41 cents per square foot for office-type space; 16 cents for warehouse-type space.

ACTUAL AND PROPOSED FUNDING BY BUDGET ACTIVITIES

[In millions of dollars]

	1965	1966	1967	1968	1969	1970	1971	1972
Maintenance repairs	22.3	27.7	25.6	28.5	28.8	30.5	31.3	32.0
Repairs and improvements	64.6	57.0	35.2	50.0	34.5	70.1	74.3	78.6
Conversions and extensions			4.8	8.2	16.7	16.1	31.4	8.4
Program direction	2.5	2.6	2.2	2.4	2.4	2.4	2.4	2.4
Administrative operations	1.3	1.1	.9	.9	1.0	1.0	1.0	1.0
Total	90.7	88.4	68.7	90.0	83.4	120.1	140.4	122.4

APPROPRIATION LANGUAGE

"For expenses, not otherwise provided for, necessary to alter public buildings and to acquire additions to sites pursuant to the Public Buildings Act of 1959 (73 Stat. 479) and to alter other Federally-owned buildings and to acquire additions to sites thereof, including grounds, approaches and appurtenances, wharves and piers, together with the necessary dredging adjacent thereto; and care and safeguarding of sites; preliminary planning of projects by contract or otherwise; maintenance, preservation, demolition, and equipment; $80,000,000, to remain available until expended: Provided, That for the purposes of this appropriation, buildings constructed pursuant to the Public Buildings Purchase Contract Act of 1954 (40 U.S.C. 356) and the Post Office Department Property Act of 1954 (39 U.S.C. 2104 et seq.), and buildings under the control of another department or agency where alteration of such buildings is required in connection with the moving of such other department or agency from buildings then, or thereafter to be, under the control of General Services Administration shall be considered to be public buildings."

JUSTIFICATION

	1967	1968	1969
1. Maintenance repairs	$25,558,519	$28,500,000	$28,800,000
2. Repairs and improvements	35,168,977	50,020,000	34,491,000
3. Conversions and extensions	4,831,321	8,154,000	16,742,000
4. Program direction	2,225,903	2,400,000	2,400,000
5. Administrative operations	890,000	926,000	986,000
Total obligations	68,674,720	90,000,000	83,419,000

The application of new obligational authority requested for each activity for 1969 follows:

(1) Maintenance repairs

	1967	1968	1969
Area of buildings (net square feet):			
In District of Columbia	24,744,416	25,600,000	26,800,000
Outside District of Columbia	152,806,598	158,300,000	161,100,000
Total	177,551,014	183,900,000	187,900,000
Office type	136,022,718	142,500,000	146,200,000
Warehouse type	41,528,296	41,400,000	41,700,000
Total	177,551,014	183,900,000	187,900,000
Unit cost per square feet:			
Office type	$0.17	$0.18	$0.18
Warehouse type	.06	.06	.06
Average all space	.14	.15	.15
Obligations:			
Office type	23,066,821	26,016,000	26,300,000
Warehouse type	2,491,698	2,484,000	2,500,000
Total	25,558,519	28,500,000	28,800,000

This activity provides for day-to-day maintenance repair work of all types including interior and exterior painting, caulking, waterproofing, cleaning and pointing of masonry surfaces.

The net increase of 4 million square feet in workload for 1969 includes additions due to new construction and transfers from other agencies, and reductions due to release of Government-owned space.

(2) Repairs and improvements

	1967		1968		1969		Change from 1968	
	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount
Inside District of Columbia	26	$3,237,969	23	$14,507,200	6	$4,461,600	−17	−$10,045,600
Outside District of Columbia	161	31,931,008	149	35,512,800	46	30,029,400	−103	−5,483,400
Total obligations	187	35,168,977	172	50,020,000	52	34,491,000	−120	−15,529,000

This activity provides for all repairs (except maintenance repairs) and conversions and extensions costing less than $25,000. Projects are selected from an inventory of urgently needed work estimated at the start of 1968 to cost $373 million. The decrease of $15.5 million is consistent with the administration's policy to minimize additional commitments and expenditures and the urgent requirement for three IRS extension projects included in activity 3 which follows.

(3) Conversions and extensions

	1967		1968		1969		Change from 1968	
	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount
Inside District of Columbia	2	$511,242						
Outside District of Columbia	17	4,320,079	21	$8,154,000	17	$16,742,000	−4	+$8,588,000
Total obligations	19	4,831,321	21	8,154,000	17	16,742,000	−4	+8,588,000

Effective with the 1969 budget estimate, this activity provides for all space conversions and extensions estimated to cost over $25,000. In the past, only space conversions estimated to cost over $25,000 and extensions costing over $25,000 but less than $200,000 were included. Extension projects costing over $200,000 were previously budgeted under the construction, public buildings projects and sites and expenses, public buildings projects appropriations. This change permits the funding of all alteration type projects in the "Repair and improvement of public buildings" appropriation. Included in this estimate are three high priority extension projects for the Internal Revenue Service, to house their essential data processing operations estimated to cost $10 million.

Exhibit A shows specific repair and improvement and conversion and extension projects costing $25,000 and over, for which obligations were incurred in 1967, those that are programed for 1968, and proposed for 1969.

EXTENSION PROJECTS

Mr. EVINS. We will not place these repair projects in, but we will look at the one, $3,112,000 in Covington, Ky.

Has that been submitted to the Congress?

Mr. KNOTT. That will go in this week. These large ones, Mr. Chairman, at Covington, at Andover, Mass., and Ogden, Utah, are extensions to the computer centers that we just built about 3 or 4 years ago.

Mr. EVINS. All extensions over $200,000 are submitted to an appropriate committee of the Congress for review?

Mr. KNOTT. Right, sir.

Mr. EVINS. And for approval, before you proceed.

Mr. KNOTT. That is right, sir. Except that it would not be required if Congress nevertheless appropriates the money.

KANSAS CITY, MO., PROJECT

Mr. EVINS. Very good.

What do you plan to do about Kansas City, Mo., with the large increase there?

Mr. KNOTT. That is a large regional complex, regional complex where Federal supply operations are located, and where the Internal Revenue Service has a computer complex in a Government-owned building.

This is one that we turned over to them and they remodeled for a computer center.

PHILADELPHIA, PA., PROJECT

Mr. EVINS. Another large one is in Philadelphia, Pa., $2,643,000.

Mr. SCHMIDT. That is the Customs House and the Appraisers Stores Building, for light, heating, electric service, and air conditioning; one of the few buildings that is not air conditioned, but one that we will retain in our inventory indefinitely.

Mr. MARSH. Mr. Chairman, I did not quite understand what you said on the item just before the last one.

Did you say model computer center?

Mr. KNOTT. Modernized Internal Revenue Service computer center; that is in what was formerly a GSA regional office and warehouse, that we gave up when we took over larger space next door that Bendix turned over to us and we used that as the base for the IRS computer center and modernized it.

OGDEN, UTAH, PROJECT

Mr. EVINS. On page I–74 you have a large one in Ogden, Utah, for $4,054,000. This is an IRS computer center?

Mr. KNOTT. Yes, sir; that serves all of the Western States.

DIFFERENCE BETWEEN ANDOVER AND OGDEN PROJECTS

Mr. EVINS. Looking at the one at Andover, Mass., that is $2,870,000. It is significantly less than the Utah center. What is the difference?

Mr. KNOTT. The one in Utah serves all of the States, all of the Western States.

There are about eight or 10 Western States that that one serves. The only after one, coming east, is Kansas City.

Mr. EVINS. Very good.

Construction, Public Buildings Projects

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	Costs to this appropriation					Analysis of 1969 financing			
	Total estimate	To June 30, 1966	1967 actual	1968 estimate	1969 estimate	Deduct selected resources and unobligated balance, start of year	Add selected resources and unobligated balance, end of year	Appropriation required, for 1969	Appropriation required to complete
Program by activities:									
1. Construction	1,820,402	700,199	147,732	125,500	51,200	265,325	214,125	----------	581,646
2. Extension and conversion	53,802	36,202	2,394	4,500	2,800	10,706	7,906	----------	----------
3. Acquisition of buildings	41,953	40,890	1,063	----------	----------	----------	----------	----------	----------
Total program costs, funded	1,916,157	777,291	151,189	130,000	54,000	276,031	222,031	----------	[2] 581,646
Change in selected resources [1]	----------	----------	−66,269	−76,000	−17,600	----------	----------	----------	----------
10 Total obligations (object class 32.0)	----------	----------	84,920	54,000	36,400	----------	----------	----------	----------
Financing:									
21 Unobligated balance available, start of year	----------	----------	−185,443	−225,841	−235,599	----------	----------	----------	----------
24 Unobligated balance available, end of year	----------	----------	225,841	235,599	199,199	----------	----------	----------	----------
40 New obligational authority (appropriation)	----------	----------	125,318	63,758	----------	----------	----------	----------	----------
Relation of obligations to expenditures:									
71 Total obligations (affecting expenditures)	----------	----------	84,920	54,000	36,400	----------	----------	----------	----------
72 Obligated balance, start of year	----------	----------	208,735	141,806	69,506	----------	----------	----------	----------
74 Obligated balance, end of year	----------	----------	−141,806	−69,506	−23,906	----------	----------	----------	----------
90 Expenditures	----------	----------	151,849	126,300	82,000	----------	----------	----------	----------
Expenditures are distributed as follows:									
01 Out of current authorizations	----------	----------	151,849	1,200	----------	----------	----------	----------	----------
02 Out of prior authorizations	----------	----------		125,100	82,000	----------	----------	----------	----------

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $182,701,000; 1967, $116,432,000; 1968, $40,432,000; 1969, $22,832,000.

[2] Estimate based upon current authorization.

Mr. EVINS. We will take a look at the Construction, public buildings projects, and we will place in the record pages I–77 and I–78.

(The pages follow:)

Summary reconciliation of 1969 estimate to 1968 funds

1968 appropriation in annual act	$63,757,900
Decrease in 1969	−63,757,900
1969 estimate	0

ANALYSIS BY ACTIVITIES

Activities	1968	Decrease	1969
1. Construction	$51,500,000	$16,500,000	$35,000,000
2. Extension and remodeling	2,500,000	1,100,000	1,400,000
Total obligations	54,000,000	17,600,000	36,400,000
Balance brought forward	−225,841,031		−235,598,931
Balance carried forward	235,598,931		199,198,931
Appropriation or estimate	63,757,900		0

	Amount
1968 appropriation	$63,757,900
Change	−63,757,900
1969 estimate	0

JUSTIFICATION

No request for new obligational authority is made under this head for 1969. It is currently planned to award contracts on six new projects in 1969 from appropriations previously granted. These actions are consistent with the administration's policy to minimize additional commitments and expenditures. From 1959 through 1968, funds totaling $1,334,511,000 have been made available for construction under this appropriation. The following tabulation shows the status of the funded program as of December 31, 1967, and approved projects remaining to be funded:

PROJECTS FULLY FUNDED THROUGH FISCAL YEAR 1968

	Number	Construction cost
1. Completed or occupied	324	$769,775,393
2. Buildings purchased	29	41,931,635
3. Under contract as of Dec. 31, 1967	45	299,068,816
4. To be placed under contract fiscal year 1969	6	27,193,600
5. To be placed under contract after fiscal year 1969	48	196,541,580
Total fully funded (exhibit B)	452	1,334,511,024

PROJECTS TO BE FUNDED AFTER 1969

Approved projects funded for S. & E.:		
Construction contract capability in fiscal year 1969 (includes Philadelphia, Pa., substructures)	17	$123,381,900
Construction contract capability after fiscal year 1969	22	297,821,900
Total	39	421,203,800
Approved projects unfunded for S. & E.	12	160,442,000
Total unfunded for improvements (exhibit A)	51	581,645,800
Total approved construction program	503	[1] 1,916,156,824

[1] Estimates based on current authorization.

Exhibits A and B following list the approved projects unfunded for construction, and projects fully funded, respectively. The exhibits show the estimated sites and expenses and construction costs, year funded, and status of the project, including contract capability dates for projects no funded for construction.

A map showing geographic distribution of the approved projects follows:

Mr. EVINS. The appropriation for 1968 was $63,757,900 and no funds are requested for new projects in 1969 as has been earlier testified.

We hope the time will come when the GSA can get back into the construction business. What are your construction plans for 1969, Mr. Administrator?

Mr. KNOTT. The President's budget contemplates a total obligation program in 1969 of $36.4 million. This provides for award of Hammond, Ind., Lincoln, Nebr., Springfield, Mass., Buffalo, N.Y., Baker, Oreg., and Oak Ridge, Tenn.

Mr. EVINS. Six projects contemplated in 1969 from appropriations already made by the Congress, that's a small program, Mr. Knott.

Mr. KNOTT. Yes, sir.

Mr. EVINS. We have no quarrel with you here. You have taken cognizance of the fiscal situation.

Sites and Expenses, Public Buildings Projects

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		Costs to this appropriation				Analysis of 1969 financing			
		Total estimate	To June 30, 1966	1967 actual	1968 estimate	1969 estimate	Deduct selected resources and unobligated balance, start of year	Add selected resources and unobligated balance, end of year	Appropriation required for 1969	Appropriation required to complete
	Program by activities:									
	1. Site acquisition	156,193	105,991	12,050	11,000	10,500	22,143	15,000	3,357	1,652
	2. Design	121,648	85,455	7,725	6,000	3,900	15,474	14,786	3,212	3,782
	3. Supervision	34,390		3,500	5,500	2,200	7,607	5,407		17,783
	4. Preliminary planning and development	11,624	6,942	360	459	2,823	14	1,040	3,849	
	5. Construction	777	777							
	6. Administrative operations	6,541	4,603	620	740	577			577	
	Total program costs, funded	331,173	203,768	24,255	23,700	20,000	45,238	36,233	10,995	23,217
	Change in selected resources [1]			−1,353	1,300	1,000				
10	Total obligations			22,902	25,000	21,000				
	Financing:									
21	Unobligated balance available, start of year			−48,992	−40,222	−35,507				
24	Unobligated balance available, end of year			40,222	35,507	25,502				
40	New obligational authority (appropriation)			14,132	20,285	10,995				
	Relation of obligations to expenditures:									
71	Total obligations (affecting expenditures)			22,902	25,000	21,000				
72	Obligated balance, start of year			12,606	9,953	12,953				
74	Obligated balance, end of year			−9,953	−12,953	−12,953				
90	Expenditures			25,555	22,000	21,000				
	Expenditures are distributed as follows:									
01	Out of current authorizations			25,555	2,000	3,000				
02	Out of prior authorizations				20,000	18,000				

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $9,784,000; 1967, $8,431,000; 1968, $9,731,000; 1969, $10,731,000.

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
21.0	Travel and transportation of persons	189	255	300
	Payments to interagency motor pools	10	20	35
22.0	Transportation of things	6	6	6
23.0	Rent, communications, and utilities	45	47	47
24.0	Printing and reproduction	252	175	150
25.1	Other services	6,737	7,580	6,345
25.2	Services of other agencies	20	100	100
25.3	Payments to construction services fund	4,108	5,500	2,800
26.0	Supplies and materials	17	17	17
32.0	Lands and structures	11,518	11,300	11,200
99.0	Total obligations	22,902	25,000	21,000

Mr. EVINS. The budgetary expenditures, Sites and expenses, Public buildings projects are shown on page I–105 through I–109. We will place these in the record.

(The pages follow:)

Summary reconciliation of 1969 estimate to 1968 funds

1968 appropriation in annual act	$20,285,000
Decrease in 1969	−9,290,000
1969 estimate	10,995,000

ANALYSIS BY ACTIVITIES

	1968	Decreases	Increases	1969
1. Site acquisition	$11,300,000	$100,000		$11,200,000
2. Design	5,500,000	2,300,000		3,200,000
3. Supervision	7,000,000	4,826,000		2,174,000
4. Preliminary planning and development	459,400		$3,389,600	3,849,000
5. Administrative operations	740,600	163,600		577,000
Total obligations	25,000,000	7,389,600	3,389,600	21,000,000
Balance brought forward	−40,222,396			−35,507,396
Balance carried forward	35,507,396			25,502,396
Appropriation of estimate	20,285,000			10,995,000

	Amount
1968 Appropriation	$20,285,000
Change	−9,290,000
1969 Estimate	10,995,000

GENERAL STATEMENT

"This appropriation provides for preliminary planning of public buildings, acquisition of sites, preparation of drawings and specifications, supervision of construction, and related costs incident to projects approved under the Public Buildings Act of 1959. Costs for improvements are financed from construction, public buildings projects.

"The estimate of $11 million for 1969 provides $3.4 million for the acquisition of sites; $3.2 million for design; $3.8 million for preliminary planning and development; and $0.6 million for administrative operations support." (From the budget for 1969.)

APPROPRIATION LANGUAGE

"For an additional amount for expenses necessary in connection with the construction of public buildings projects not otherwise provided for, as specified under this head in the Independent Offices Appropriation Acts of 1959 and 1960, including preliminary planning of public buildings projects by contract or otherwise, [$20,285,000] *$10,995,000*, to remain available until expended."

JUSTIFICATION

The estimate of $10,995,000 provides for the acquisition of sites, where necessary, and for the design of seven new public buildings construction projects and increases in four projects (New Haven, Conn., PO FOB; Waterville, Maine, PO FOB; Fitchburg, Mass., PO FOB; and Detroit, Mich. IRS) initially funded in 1967, 1968, 1966, and 1964, respectively. Three of the four increases are required to meet expanded space needs of the Post Office Department, while the other increase is required to provide critical space needs of the Internal Revenue Service. All projects have been authorized under the Public Buildings Act of 1959.

Included in this estimate are funds for the design of the Pennsylvania Avenue Annex and Grand Plaza parking facility which will constitute a major step forward toward providing consolidated housing for Federal agencies requiring a central Washington location. Construction of this building, together with the ultimate extension of the Internal Revenue building, would essentially complete the Federal Triangle in accordance with the recommendations of the President's Council on Pennsylvania Avenue.

The Pennsylvania Avenue Annex will require the removal of the obsolete U.S. Coast Guard Building at 1300 E Street, formerly known as the Southern Railway Building. The building was built in three separate sections between 1900 and 1918 and was purchased by the Federal Government in 1928. It is substandard and costly to operate, requiring extensive modernization estimated to cost $4 million. The present building contains about 218,000 net square feet which is not quite half of the proposed 452,000 net square feet to be erected on the site. This will permit the reassignment of 234,000 net square feet of Government-owned and leased space resulting in an annual rental savings of $600,000.

The Grand Plaza is located south of the District Building, north of the Labor Department Building between 13th and 14th Streets, and was purchased by the Federal Government as an integral part of the Federal Triangle complex. Since 1930 most of this tract has been leased to commercial parking operators for parking, and can accommodate 1,200 vehicles. Surveys, studies, and recommendations made by Federal and District Government agencies reflect the critical shortage of off-street parking facilities within this area. Since this is the only area within the Triangle where sufficient footage can be developed to accommodate an underground parking garage, design of a two-level underground facility is included in this estimate to accommodate 1,900 vehicles, attendant parked, for an increase of 58 percent over present accommodations.

The other six new design starts, all outside the District of Columbia, are to provide for critical space needs in specific geographical locations. Deferral would only add to the ultimate cost of construction. Completion of these projects will permit the consolidation of Government activities, providing more efficient operations, and permitting the cancellation of leases costing approximately $800,000 annually.

Funds for construction supervision in the past were requested and approved under this appropriation at the time funds were made available for sites and design. In order to reflect more current estimates based on design at an advanced stage rather than on a general design assumption, current salary rates, and other costs, funding hereafter will be requested under this appropriation for the fiscal year in which construction is scheduled to start. This will provide sufficient funds commensurate with the required level of supervision which experience has indicated is necessary by enabling supervision estimates to more accurately reflect current costs. However, no new funds are being requested in the 1969 estimate for construction supervision since funds are currently available within this appropriation to provide the required improved level of supervision for projects scheduled for construction award during fiscal years 1968 and 1969. Construction supervision is reflected in this program as a separate activity.

Recent General Accounting Office reports have stressed the need for improved procedures in the inspection of Government buildings during the construction stage to insure that contract specifications are met. In addition, a management study of the General Services Administration construction program was recently completed which, among other things, stressed the need for application of increased staff to better supervise the construction of public building projects.

This estimate includes $3,849 thousand for preliminary planning and development of construction projects to be made available for (1) feasibility studies; (2) site investigations, selections, and appraisals including negotiations and obtaining options to purchase; (3) topographical surveys including test borings; and (4) design through the tentative stage, if possible, with options for completion, all of which will aid us in preparing better justification for obtaining congressional authorization of projects. This approach will permit design starts on selected projects with a minimum of appropriated funds; submission of firmer estimates for site acquisition, design, and construction based on tentative drawings; and reduce the time lag for site acquisition, design, and construction award after appropriations are made available. This last factor is particularly important in that any savings in time results in ultimate dollar savings because of the ever increasing cost of construction.

Through fiscal year 1968, appropriations totaling $297 million have been made available under this program for projects listed in exhibits A and B included under the estimate for Construction, public buildings projects. These exhibits reflect the application of these funds to specific projects and also show the year in which the projects were funded, the estimated improvement cost, and the current status of the projects.

There follows a listing of the projects proposed for Sites and expenses funding, excluding construction supervision for 1969.

Project	Approved by Public Works Committees	Sites and expenses		Improvements		Total
		Available	In 1969 request	Available	Required after 1969	
Arizona: Tucson, FOB	October 1966		$1,215,000		$3,081,000	$4,296,00
Connecticut:						
New Haven, PO FOB:						
Original	September 1965	$317,000				
Amended	December 1967		400,000		5,858,000	6,575,000
Maine:						
Waterville, PO FOB:						
Original	October 1966	334,000				
Amended	December 1967		218,000		1,661,000	2,213,000
Massachusetts:						
Fitchburg, PO FOB:						
Original	April 1965	471,000		$1,268,000		
Amended	December 1967		81,000		1,424,000	3,244,000
Michigan:						
Detroit, National Data Center (IRS):						
Original	July 1963	561,000		3,496,000		
Amended	December 1967		293,000		3,287,000	7,637,000
Ohio:						
Akron, CT FOB	September 1965		1,323,000		3,674,000	4,997,000
Dayton, CT FOB	do		241,000		4,395,000	4,636,000
Puerto Rico: San Juan, warehouse and motor pool facility	do		60,000		875,000	935,000
South Dakota:						
Rapid City, CT FOB:						
Original	October 1966					
Amended	December 1967		590,000		2,460,000	3,050,000
Virginia: Roanoke, FOB	October 1966		662,000		4,703,000	5,365,000
Washington, D.C.:						
Federal Triangle: Pennsylvania Ave. annex and grand plaza parking facility	do		1,486,000		39,245,000	40,731,000
Preliminary planning, development, and administrative operations			4,426,000			4,426,000
Total, 11 projects		1,683,000	10,995,000	4,764,000	70,663,000	88,105,000

Project data sheets for each of the foregoing projects have been developed which outline the project need and description, square feet areas to be provided, cost estimates, agencies proposed to the housed, and other pertinent data. These data sheets are included in the separate book titled "Public Buildings Projects Approved Under the Public Buildings Act of 1959."

SUMMARY RECONCILIATION OF 1969 ESTIMATE TO 1968 FUNDS

Mr. EVINS. Last year, Mr. Administrator, your appropriation was $20,285,000, and for 1969 you are proposing a decrease for sites and expenses of $9,290,000, or a budget appropriation request of $10,995,000. You show how this is broken down: site acquisition, $11.2 million; design, $3.2 million; supervision, $2.174 million; preliminary plans and development, $3.849 million; administrative operations, administrative costs, $577,000. This would be $21 million.

What is this balance brought forward? It shows a decrease.

Mr. JOHNSON. You have the same thing here as in Construction and repair and improvement, Mr. Chairman.

This is a no-year appropriation, and that figure is the balance brought forward. It was appropriated in earlier years and the amount carried forward is the amount we cannot complete in a year's time.

Mr. EVINS. Well, it is a no-year appropriation and this is a carryover.

Mr. JOHNSON. Yes, sir.

Mr. EVINS. You need a new appropriation of $10.995 million.

Tell us again how many sites are anticipated to be acquired in the new year.

SITES AND EXPENSES PROJECTS

Mr. SCHMIDT. On page I–109, Mr. Chairman, we have listed the projects under which we will begin site and design work.

Mr. EVINS. The commissioner can go down the list and tell us about it.

Mr. SCHMIDT. At Tucson, Ariz., Federal office building, we would acquire a site and begin design of the building.

At New Haven, Conn., a post office, Federal office building. Originally we had an authorization in New Haven which provided for the construction of a new courthouse, post office, Federal office building.

Mr. EVINS. All these projects have been approved by the authorizing committee?

Mr. SCHMIDT. That is correct, sir.

Our present plan in New Haven, Conn., is to construct a new post office, Federal office building, and modernize the old building for the use of the courts.

In Waterville, Maine, a post office Federal office building. This project provides for a larger postal operation than originally planned. We will proceed with the acquisition of the site and design of the building.

At Fitchburg, Mass., the same requirement.

WASHINGTON, D.C., PROJECT

Mr. EVINS. You are asking for funds for acquisition of sites and design for 10 buildings outside of the District of Columbia and one in the District.

This is the Federal Triangle, Pennsylvania Avenue Annex, and the Grand Plaza parking facility.

Mr. SCHMIDT. This is a part of the completion of the Federal Triangle.

Mr. KNOTT. That is the area, Mr. Chairman——

Mr. EVINS. Pennsylvania and Constitution Avenues.

We know where the new FBI building is going to be built.

Mr. KNOTT. You know where the Coast Guard is, the old Southern Railway Building, next to the District Building. That comes out, and the building which has an unfinished end would be extended on down to the District Building. This will complete what is known as the Grand Plaza, and we would put parking underground, at two levels.

Mr. EVINS. Well, parking is certainly needed.

Mr. KNOTT. There is parking above ground now.

Mr. SCHMIDT [pointing to a photograph]. This is 14th Street, and this is 12th Street.

The large, dark area in the photograph is the underground parking facility, and right adjoining it, the smaller black area is the annex to the Post Office Building.

Mr. EVINS. There is a lot of parking in this area. You own the property; it is not an acquisition of site, but design.

Mr. SCHMIDT. We own the land. We have only done a feasibility study for purposes of estimating.

SPACE FOR COAST GUARD

Mr. BOLAND. Where does the Coast Guard figure in your projections for space?

This is one agency of the Government that has been housed in a decrepit old building.

What plans do you have for them?

Mr. KNOTT. They are part of the Department of Transportation and we want to get them down in Southwest. There is a major building under construction down there now.

Mr. BOLAND. Why not a building of their own? With all of the armed services having buildings of their own, why can you not put them in their own building?

Mr. KNOTT. Well, there is no reason why they should not, except they would have to be located away from the new Department headquarters. There is some psychological advantage, if not operational advantage, in having them close together at this time.

Certainly, it is a distinguished service that needs its own facility.

Mr. BOLAND. It does. The facilities they are now in leave much to be desired.

Mr. KNOTT. They are among the worst in town.

FEDERAL TRIANGLE

Mr. EVINS. Mr. Administrator, what is estimated to be the ultimate cost of this building, and how is it to be designated?

Mr. KNOTT. This probably will always be known as the Federal Triangle.

Mr. EVINS. There are a lot of buildings in the Federal Triangle, but you have to identify it.

Mr. KNOTT. It is a grand design. This is but a part of the grand design for the Federal Triangle. The end building is the Apex Building.

COST OF PROJECT

Mr. EVINS. How much is it going to cost, do you know?

Mr. SCHMIDT. Our total estimated cost is $40.7 million.

Mr. EVINS. Then that is $45 million.

Mr. SCHMIDT. No; it is $40.7 million.

Mr. EVINS. Based on the past experience of increased costs, it is $45 million.

At the present time this space is being utilized for parking. How many cars can be parked there presently?

Mr. SCHMIDT. Approximately 1,200.

Mr. EVINS. You state in your justification that the design will only increase the parking by about 58 percent for two-level parking.

Mr. SCHMIDT. When I said 1,200, I was talking about all the parking, not only in this area here [pointing to the plot] but the areas encroaching upon the other buildings, including all of the streets.

Incidentally, there is a great deal of interest in the development of that parking facility with private capital, since it offers an opportunity for use, after hours, as well as Saturdays, Sundays, and holidays.

Mr. EVINS. Well, commercial interests would like to get hold of it and charge the Government employees.

Mr. SCHMIDT. The Government employees currently are paying a nominal charge. It is leased.

PARKING REVENUE

Mr. EVINS. How much revenue is coming from it?

Mr. SCHMIDT. The income on that parking lot is $193,333 per year.

Mr. BOLAND. What is proposed to be housed in this building?

Mr. SCHMIDT. We would use this space for regulatory agencies.

Mr. BOLAND. How tall is this building going to be?

Mr. KNOTT. About six or seven stories.

That is about all you can do there.

Mr. EVINS. Well, Mr. Administrator, we note that you are proposing site acquisitions and architectural plans, but there is no acquisition required for this because the Government already owns it.

The money to be appropriated for next year would be for drawing designs and plans.

The other 10 are outside the District of Columbia. Are site acquisitions required in these cases?

Mr. KNOTT. We own the sites for Dayton and San Juan, Mr. Chairman.

PAYMENTS, PUBLIC BUILDINGS PURCHASE CONTRACTS

PROGRAM AND FINANCING

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Payments to contractors	6,081	1,824	1,824
	2. Taxes	665	526	576
10	Total program costs, funded—obligations [1]	6,746	2,350	2,400
	Financing:			
40	New obligational authority (appropriation)	6,746	2,350	2,400
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	6,746	2,350	2,400
72	Obligated balance, start of year	74	54	
74	Obligated balance, end of year	−54		
90	Expenditures	6,766	2,404	2,400
	Expenditures are distributed as follows:			
01	Out of current authorizations	6,692	2,350	2,400
02	Out of prior authorizations	74	54	

[1] Includes capital outlay as follows: 1967, $4,875,000; 1968, $782,000; 1969, $821,000.

OBJECT CLASSIFICATION

32.0	Lands and structures	4,875	782	821
41.0	Grants, subsidies, and contributions	665	526	576
43.0	Interest and dividends	1,206	1,042	1,003
99.0	Total obligations	6,746	2,350	2,400

Mr. EVINS. Take a look at your Public Buildings contracts. I believe, Mr. Administrator, you testified earlier there are five of these leased purchase buildings still owned by individuals, and the Government makes annual lease payments to them.

Mr. KNOTT. Yes, sir

Mr. EVINS. The taxes for 1969 for the five remaining projects are estimated to be $575,640.

Mr. KNOTT. That is an increase of $50,000.

Mr. EVINS. The appropriation for 1968 was $2,350,000 and the estimated appropriation for 1969 is $2.4 million.

Mr. KNOTT. Of which $1,824,360 is a basic payment, principal and interest, and the $575,640 is the taxes.

FIVE REMAINING PROJECTS

Mr. EVINS. One building is in Atlanta, Ga., one is in Kansas City, one in Omaha, Nebr., one in Albuquerque, N. Mex., and one in Huntington, W. Va.

These are the five projects not yet acquired.

Has there been any negotiation during the year looking toward the purchase of any of these properties?

Mr. KNOTT. None of these are available until fiscal year 1973, I believe. That is the earliest date.

We did prepay one last year. We had prepayment rights on Sacramento, and that has been paid off.

Mr. JOHNSON. The third column shows when we can negotiate for prepayment.

EXPENSES, U.S. COURT FACILITIES

PROGRAM AND FINANCING

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Rent and related costs	237	325	645
	2. Furniture and furnishings, newly constructed buildings	499	737	250
	3. Furniture and furnishings, other buildings	453	475	475
	Total program costs, funded [1]	1,189	1,537	1,370
	Change in selected resources [2]	94	−536	−170
10	Total obligations	1,284	1,000	1,200
	Financing:			
25	Unobligated balance lapsing	216		
40	New obligational authority (appropriation)	1,500	1,000	1,200
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	1,284	1,000	1,200
72	Obligated balance, start of year	811	1,039	739
74	Obligated balance, end of year	−1,039	−739	−639
77	Adjustments in expired accounts	−16		
90	Expenditures	1,041	1,300	1,300
	Expenditures are distributed as follows:			
01	Out of current authorizations	687	560	780
02	Out of prior authorizations	354	740	520

[1] Includes capital outlay as follows: 1967, $790,000; 1968, $1,030,000; 1969, $637,000.
[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $794,000 (1967 adjustments, −$20,000); 1967, $868,000; 1968, $332,000; 1969, $162,000.

OBJECT CLASSIFICATION

		1967 actual	1968 estimate	1969 estimate
22.0	Transportation of things	5	5	5
23.0	Rent, communications, and utilities	221	295	585
25.1	Other services	137	100	115
26.0	Supplies and materials	83	50	50
31.0	Equipment	838	550	445
99.0	Total obligations	1,284	1,000	1,200

Mr. EVINS. One other item in this volume is expenses for court facilities.

In 1968 you had an appropriation of $1 million.

Now you are asking for increases of $320,000 for rent and related costs, and $125,000 for furniture and furnishings; then there is some sale or disposal of furnishings for $245,000.

How does this decrease come into the picture?

Mr. JOHNSON. That is a change in the base.

We had $295,000 in the 1968 base for furniture and furnishings for newly constructed buildings where we provided the furniture.

Mr. EVINS. Well, a net increase of $200,000.

Mr. KNOTT. Yes, sir.

Mr. EVINS. You have an estimated appropriation of $1.2 million.

Mr. KNOTT. Yes, sir.

Mr. EVINS. Any question regarding the court facilities?

If not, we will place these three items in the record, and suspend until 1:30.

(The documents follow:)

Summary reconciliation of 1969 estimate to 1968 funds

1968 appropriation in annual act	$1,000,000
Increases in 1969:	
Rent and related costs	320,000
Furniture and furnishings, other buildings	125,000
Decrease in 1969: Furniture and furnishings, newly constructed buildings	−245,000
Total	200,000
1969 estimate	1,200,000

ANALYSIS BY ACTIVITIES

Activities	1968	Increase	Decrease	1969
1. Rent and related costs	$325,000	$320,000		$645,000
2. Furniture and furnishings, newly constructed buildings	295,000		$245,000	50,000
3. Furniture and furnishings, other buildings	380,000	125,000		505,000
Total (appropriation)	1,000,000	445,000	245,000	1,200,000

	Amount
1968 appropriation	$1,000,000
Change	200,000
1969 estimate	1,200,000

HIGHLIGHT

"This appropriation provides for costs, not otherwise provided for, of the U.S. Courts incident to space expansion and for furniture and furnishings requirements of the U.S. Court of Appeals and District Courts, the Court of Claims, and the Court of Customs and Patent Appeals." (From the budget for 1969.)

This appropriation provides for (1) leasing space required for the courts and for agencies displaced from Government-owned buildings to provide for expanded court requirements; (2) furniture and furnishings for court activities to be housed in newly constructed buildings; and (3) new and replacement furniture and furnishings for court activities in existing Government-owned buildings.

Requirements for 1969 have been reviewed and approved by the Administrative Office of the U.S. Courts.

APPROPRIATION LANGUAGE

"For necessary expenses, not otherwise provided for, to provide directly or indirectly, additional space for the United States Courts incident to expansion of facilities (including rental or buildings in the District of Columbia and elsewhere and moving and space adjustments), and furniture and furnishings. [$1,000,000] *$1,200,000.*"

JUSTIFICATION

1. Rent and related costs:

1967	$237,774
1968	325,000
1969	645,000

The 1969 estimate provides for an increase of $273,000 under this activity for 60,600 net square feet of additional leased space to be acquired in 1969 and $47,000 for moving expenses and related costs.

The 1969 addition will provide leased space required in lieu of vacated Government-owned space to be made available for additional courtrooms and chambers for five judges filling vacancies created by the retirement of five judges who will remain active. Space must be provided at the same time for a clerical staff of 15 (21,750 square feet); 95 additional deputy clerks (9,500 square feet); 49 clerks (legal) and 30 stenographers for the court of appeals (11,850 square feet); one additional referee in bankruptcy and 3 clerks (2,500 square feet); conversion of two part-time referees in bankruptcy to full-time status requiring private offices, and six clerks (5,000 square feet); and 88 additional clerks for referees in bank-

ruptcy (8,800 square feet); all of which will be located outside the District of Columbia; and 12 additional employees for the Administrative Office of the U.S. Courts (1,200 square feet) within the District of Columbia. The exact locations of the placement of the additional staff have not been determined at this time.

All of the requirements enumerated above are consisent with the 1969 request of the judiciary for the listed personnel increases.

2. *Furniture and furnishings, newly constructed buildings:*

1967	$628,078
1968	295,000
1969	50,000

Provides for furniture and furnishings for newly established court activities, and for the rehabilitation and/or replacement of furniture for existing court activities to be located in the following newly constructed and/or remodeled buildings scheduled for completion in 1969: Butte, Mont., $20,172; Valdosta, Ga., $21,491; and $8,337 for contingencies and unscheduled locations. Exhibit A reflects a breakdown of requirements by location.

3. *Furniture and furnishings, other buildings:*

1967	$418,595
1968	380,000
1969	505,000

Provides $380,000 for new and replacement furniture and furnishings for 360 locations where Federal Court facilities are maintained, including the amount of $10,000 for the recurring needs of the Court of Claims, and the Court of Customs and Patent Appeals. The sum of $125,000 is included for the nonrecurring cost of furniture and furnishings required for new personnel: $70,000 for five District judges ($14,000 per judge) to fill vacancies created by retirement of judges who remain active, and $55,000 for 183 additional supporting personnel (average cost $300 each) included in the judiciary budget for U.S. court of appeals and district courts.

EXPLANATION OF DISTRIBUTION BY OBJECTS

22 *Transportation of things, $5,000.*—For the payment of transportation expenses incident to the procurement of furniture and furnishings.
23 *Rents and utility services, $585,000.*—For payments to the buildings management fund for rental and utility services.
25 *Other services, $115,000.*—Primarily for payments to the buildings management fund for moving and related costs.
26 *Supplies and materials, $50,000.*—For office furnishings.
31 *Equipment, $445,000.*—For office furniture.

EXHIBIT A

EXPENSES, U.S. COURT FACILITIES, FURNITURE AND FURNISHINGS FOR NEWLY CONSTRUCTED BUILDINGS AS RELATED TO U.S. COURTS

	Butte, Mont.	Valdosta, Ga.	Total
Judges suit including chambers, library, robing room, studies, secretary, law clerk, and bailiff	$8,476	$6,235	$14,711
Courtrooms (moveable furniture only)	3,862	2,717	6,579
Court clerks and staff	1,406	4,189	5,595
Witness rooms, grand jury and petit	3,543	4,425	7,968
Court reporters	222	484	706
Probation officers and staff	663	1,391	2,054
Court libraries other than judges		993	993
U.S. commissioners and staff		700	700
Conference and consultation rooms, etc		207	207
Transportation, uncrating and placement	2,000	150	2,150
Subtotal	20,172	21,491	41,663
Contingencies and unscheduled locations			8,337
Total estimated cost			50,000

AFTERNOON SESSION

Mr. EVINS. The committee will come to order and we will resume our hearing this afternoon with principals of the General Services Administration.

Let us consider volume II of their budget.

Operating Expenses, Federal Supply Service

PROGRAM AND FINANCING

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Supply distribution:			
	(a) Distribution operations	26,834	29,851	30,154
	(b) Space and related costs	5,138	5,609	6,441
	Total, supply distribution	31,972	35,460	36,595
	2. Procurement	14,305	15,635	16,417
	3. Inspection	4,460	5,589	5,629
	4. Supply standardization	3,289	3,774	4,661
	5. Supply management	1,126	1,288	1,300
	6. Automated data management services	678	1,145	1,790
	7. Service direction	1,795	1,914	1,940
	8. Administrative operations	6,899	7,269	8,202
	Total program costs, funded [1]	64,524	72,074	76,534
	Change in selected resources [2]	777	−293	
10	Total obligations	65,302	71,781	76,534
	Financing:			
25	Unobligated balance lapsing	269		
	New obligational authority	65,571	71,781	76,534
	New obligational authority:			
40	Appropriation	65,000	68,500	76,534
42	Transferred from other accounts	571	2,150	
43	Appropriation (adjusted)	65,571	70,650	76,534
44	Proposed supplemental for civilian pay act increases		1,131	
	Relation of obligations to expenditures:			
71	Total obligations affecting expenditures	65,302	71,781	76,534
72	Obligated balance, start of year	3,763	2,210	4,564
74	Obligated balance, end of year	−2,210	−4,564	−5,768
77	Adjustments in expired accounts	−203		
90	Expenditures excluding pay increase supplemental	66,652	68,346	75,280
91	Expenditures from civilian pay act supplemental		1,081	50
	Expenditures are distributed as follows:			
01	Out of current authorizations	63,475	67,557	71,940
02	Out of prior authorizations	3,177	1,870	3,390

[1] Excludes adjustment of prior year cost of $84 thousand.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $1,292,000 (1967 adjustments, −$276,000); 1967, $1,793,000; 1968, $1,500,000; 1969, $1,500,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	31,133	36,228	38,693
11.3	Positions other than permanent	1,629	1,140	934
11.5	Other personnel compensation	1,470	1,646	1,486
	Total personnel compensation	34,232	39,014	41,113
12.0	Personnel benefits	2,579	2,926	3,147
13.0	Benefits for former personnel	4		
21.0	Travel and transportation of persons	420	554	562
	Payment to interagency motor pools	201	214	220
22.0	Transportation of things	218	122	131
23.0	Rent, communications, and utilities	5,005	5,709	6,529
24.0	Printing and reproduction	1,074	1,055	1,084
25.1	Other services	19,505	20,249	21,861
25.2	Services of other agencies	1,058	844	769
26.0	Supplies and materials	1,005	1,094	1,118
99.0	Total obligations	65,302	71,781	76,534

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	4,407	5,040	5,233
Full-time equivalent of other positions	381	272	246
Average number of all employees	4,462	4,958	5,134
Average GS grade	7.5	7.5	7.5
Average GS salary	$8,207	$8,611	$8,703
Average salary of ungraded positions	$6,176	$5,953	$6,069

The Federal Supply Service performs all the functions with respect to the efficient supply management practices throughout the Government. If they are inefficient, it doesn't come under GSA.

Other functions are operating a supply system through which commercial-type commodities are purchased and provided to Government, agencies, both domestic and overseas, and cost-type contractors on reimbursable basis from depot stocks, retail stores, service centers, or by direct delivery from suppliers; and the third function relates to the Government-wide automatic data management coordinating program which provides for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal department agencies.

These operations are financed from three sources: a single appropriation for operating expenses; the General Supply Fund, a revolving fund, which initally finances the purchase of commodities, subject to reimbursement by ordering agencies; and, three, the automatic data processing fund, a revolving fund, available for the procurement by lease, purchase, and transfer of equipment, maintenance and repair of such equipment necessary for the efficient utilization of such equipment by the Federal agencies.

Well, that covers a big field. Here is a chart showing new obligational authority and related average employment. For 1969 you are asking appropriations for the Federal Supply Service of $76,534,000, as against $71,781,000 for last year.

How are these increases broken down, Mr. Abersfeller?

INCREASE IN APPROPRIATIONS

Mr. ABERSFELLER. The necessary increase for the pay act of 1967 is $535,000. Covering the increase in volume for our supply distribution program is $522,000; $601,000 to increase the volume of procurement and inspection; $820,000 to increase our specifications and catalog program. And then we have $619,000 for the Office of Automated Data Management Services, $826,000 for increase in space, and the remaining amount is for our part of the administrative operations fund that was discussed this morning.

Mr. EVINS. Are these increases shown on II–3?

Mr. ABERSFELLER. Yes, sir.

Mr. EVINS. Place this table in the record—II–3.

(The document referred to follows:)

Summary reconciliation of 1969 estimate to comparable amounts for 1968

1968:	
Appropriation in annual act	$68,500,000
Transferred from "Operations and maintenance, Defense Supply Agency"	2,150,000
Proposed supplemental for pay act increase	1,131,000
Comparative total for 1968	71,781,000

Increase in 1969:	
Net additional cost of 1967 Pay Act	$535,400
For costs related to increase in stores sales volume	522,000
Increase in procurement and inspection activities to handle increased procurement volume of $61,000,000 (from $1,774,000,000 to $1,835,000,000)	601,400
Increase in specifications, standards, and cataloging	820,600
Increase in automated data management services (including procurement volume from $423,800,000 to $492,000,000)	619,800
Increase in space and related costs	826,500
Administrative operations	816,300
Other	11,000
Total	4,753,000
1969 estimate	76,534,000

ANALYSIS BY ACTIVITIES

	1968	Increase	1969
1. Supply distribution	$35,167,000	$1,428,000	$36,595,000
2. Procurement	15,635,000	782,000	16,417,000
3. Inspection	5,589,000	40,000	5,629,000
4. Standardization	3,774,000	887,000	4,661,000
5. Supply management	1,288,000	12,000	1,300,000
6. Automated data management services	1,145,000	645,000	1,790,000
7. Service direction	1,914,000	26,000	1,940,000
8. Administrative operations	7,269,000	933,000	8,202,000
Total	71,781,000	4,753,000	76,534,000

STORES STOCK SALES AND UNIT COSTS

Mr. EVINS. On the next page you show stores stock sales. The military shows major increases the past 3 years which we can understand. Depot unit costs is going down. What do you consider the units, 6.62 as against 4.90?

Mr. ABERSFELLER. The units are cost per hundred dollars of material shipped. Our unit cost is less than 5 percent, including costs of receiving, handling, and shipping merchandise through our warehouse system.

Mr. EVINS. What is the total volume of store purchases? Give a picture of your inventory so we can see the bigness of your operation.

Mr. ABERSFELLER. The current inventory available for issue stands about $235 million.

Mr. EVINS. $235 million?

Mr. ABERSFELLER. Yes, sir. Our store sales for this year are shown at $599 million with $615 million for the budget year, fiscal 1969.

Mr. EVINS. What is your turnover?

Mr. ABERSFELLER. Two and one-half times a year.

TURNOVER ITEMS

Mr. EVINS. What are the more active turnover items?

Mr. ABERSFELLER. Most active are paper product items. Paper towels, toilet paper, and that sort of thing.

Mr. EVINS. What about drugs?

Mr. ABERSFELLER. We have very few drugs. We have some aspirin

and a few first aid kits and some ointments but very few drugs in the system. The Veterans' Administration does most of that, supplying the civilian agencies by contract, and, of course, the Department of Defense has its own supply system.

Mr. EVINS. How much of your increase is for purchase and handling of supplies?

Mr. ABERSFELLER. The increase in handling of supplies is $1,428,000, including the pay increases; the increases in procurement, $782,000; and we have $40,000 increase in inspection. Those three programs constitute our supply operations program.

AUTOMATIC DATA MANAGEMENT SERVICES

Mr. EVINS. And your automatic data processing accounts for $645,000?

Mr. ABERSFELLER. That is correct; yes, sir.

Mr. EVINS. This is to accelerate the Government-wide ADP coordination functions.

Mr. ABERSFELLER. That figure includes our ADP coordinating and management functions and ADP procurement. One of the reasons for that increase, Mr. Chairman, is the need to improve the ADP management information system.

INVENTORY INSPECTION

Mr. EVINS. You have about $235 million in inventory?

Mr. ABERSFELLER. Yes, sir.

Mr. EVINS. How much time is expended in inspecting this inventory? You testified earlier that you do not want any irregularities.

Mr. ABERSFELLER. The auditing the Administrator spoke about this morning was the checking required to be certain none of the material disappeared from our depot system. Arrangements are made by the investigation staff to check people who leave the warehouse complex to be sure none of the Government material is removed by unauthorized persons or means. This also involves spot checking of automobiles and trucks. The inspection of material which we are budgeting for is separate from what the Administrator talked about this morning. A very small amount of this money is for inspecting warehouse material in the warehouse. Most of the $5.6 million we are asking for is for the preaward surveying, which involves plant facility reports, inspection of the material at source, and helping small business to get under our quality assurance program. We do inspect all the material which is delivered to our warehouse system and also inspect some of the nonstores and Federal supply schedule merchandise.

INSPECTION COST

Mr. EVINS. Inspection is shown on page II–16. It costs 57 cents to inspect $100 worth of merchandise?

Mr. ABERSFELLER. Yes, sir; for the stores program.

Mr. EVINS. Now, nonstores inspection——

Mr. ABERSFELLER. This involves direct order material such as fertilizer for AID programs or some trucks for Post Office Department; the

unit cost is 39 cents per hundred dollars of material inspected and the volume for 1969 is estimated to be $221.5 million.

Mr. EVINS. The third item there is schedules.

Mr. ABERSFELLER. Schedule program volume is related to those items for which we have Federal supply schedule contracts. We do have selective inspection there; we do not, for example, inspect typewriters and things of that nature which are regular commercial products.

Mr. EVINS. The unit cost used to be 45 cents and now it is 80; almost doubled?

INSPECTION OF MAGNETIC COMPUTER TAPE

Mr. ABERSFELLER. That is solely because of inspection of magnetic tape—last year a reel cost $25. Now it is $13, and this is the direct result of our specification program. We are inspecting tape using a scientific random sampling technique.

Mr. EVINS. What is the nature of the inspection?

The manufacturer checks it before it is sold to the Federal Government and when it is delivered to the Government you check it again before it is delivered to the agency.

Mr. ABERSFELLER. That is correct.

Mr. EVINS. What is the nature of the inspection?

Mr. ABERSFELLER. We select reels of tape on a random sample basis, they go on a machine, and we check primarily for errors on the tape.

Mr. EVINS Well, this is clear tape. Nothing on it yet.

Mr. ABERSFELLER. Information is placed on the tape and we see whether it will read out correctly. There may be dirt on it or the oxides may not be precisely placed on this material. There may be flaws in the tape or places which would keep you from being able to write into it or read out of it accurately.

DISCOVERY OF UNSATISFACTORY MATERIAL

Mr. EVINS. Do you find any percentage of unsatisfactory material on this type of inspection?

Mr. ABERSFELLER. We recently rejected 3,000 reels of this tape from a producer. Of course, Mr. Chairman, magnetic tape is a very small part of the cost of operating an automatic data processing activity, but should too many errors come into the system it is extremely wasteful. The cost of ADP operations runs about $1,000 an hour for high volume machines. This is why we embarked on the specification, by reducing errors from 18 per reel to less than one per reel.

PRINCIPAL PURCHASERS OF MAGNETIC TAPE

Mr. EVINS. Who is the principal purchaser?

Mr. ABERSFELLER. The principal purchasers would be those that have the most machines. There are three agencies in the Government which have 90 percent of the machines—the Department of Defense, the Atomic Energy Commission and NASA.

GAO REPORT ON TRANSFER OF HANDTOOLS FROM DOD

Mr. EVINS. There is a report from the Comptroller General in May of last year in which it is stated that an important step toward develop-

ment of a national supply system was taken with the transfer of about $65 million worth of handtools and stocks from the Department of Defense to GSA.

It was revealed that there were GSA owned stocks on hand which were not recorded on the ad inventory record. Consequently, these stocks were "lost" to this supply system. What became of them?

Mr. ABERSFELLER. That report goes on to say that when they made the transfer, the Department of Defense failed to report some of the items to us. When the General Accounting Office visited the defense activity they found inventory of identical items. Then the Defense Supply Agency, part of the Department of Defense caused an inventory to be taken. These items were then reported to us and we moved them into our system.

Mr. EVINS. And the recommendation of the Comptroller General has been implemented in this instance?

Mr. ABERSFELLER. Yes, sir.

PURCHASE AT LOWEST POSSIBLE PRICE

Mr. EVINS. Well, it is a big supply operation. What are your principal problems over there, Mr. Abersfeller?

Mr. ABERSFELLER. Problems?

Mr. EVINS. You have a pretty smooth operation. You don't have any problems, do you?

Mr. ABERSFELLER. Right now the principal problem is trying to buy at the lowest possible price. We have concentrated always on this particular point but are reemphasizing it this year. In some instances we haven't been getting the best price in dealing with contractors by negotiation and awarding schedules.

Mr. EVINS With the volume purchase of the Government you don't have to go out and solicit business. You ought to get excellent quality.

Mr. ABERSFELLER. Precisely our point. We have difficulty convincing those from whom we buy.

PROCUREMENT OF TIRES AND DRUGS

Mr. EVINS. You say you can save a million and a half dollars a year by procuring your tires and drugs by advertising rather than negotiated contract?

Mr. ABERSFELLER. That is correct. We agree with the GAO report and have been working on implementing it. We have not yet done it but we expect to stock tires starting in July. The holdup is we have been unable to qualify any tires against the new specification. We developed new specifications a year ago. We are now in the process of testing those tires and as soon as these tires qualify under that new specification we will be storing tires.

TIRE SPECIFICATIONS

Mr. JONAS. Will your specification be higher than the original tires?

Mr. ABERSFELLER. Mr. Jonas, there are no specifications for original equipment tires alone. Some original equipment tires will meet the new specification; some will not. That statement is based on the test of those tires that we have made.

Now, obviously, it was a small sample. We don't want to prejudge it but in this particular case the tests we will be making will be static, dynamic and over the road tests.

We are about to enter into a contract with a firm in Texas to test the tires for us over the road there, and we are currently running tests on the so-called wheel, a very large device that places tires around a wheel and runs at varying speeds and load limits for different periods of time. But to answer the question directly, some will meet, as best as we can tell and some will not.

I believe that some of the tire manufacturers who do not sell original equipment tires will have a better opportunity of meeting our specification than some of the others.

Mr. JONAS. Replacement?

Mr. ABERFELLER. These are more independent firms; as you know, only five producers sell tires to automobile manufacturers. The independents, like Mohawk, Gates, and the others do not sell to the original equipment manufacturers. They rather sell for replacement purposes. Also, I might point out that you cannot generally buy an original equipment tire yourself. These are somewhat different from those same brand tires which are sold in the marketplace by the same companies as hundred level tires. But in any event, it would appear to us that the independent tire manufacturers would have better opportunities with the tire they sell as the so-called hundred level line.

INSPECTION EMPLOYMENT

Mr. EVINS. How many people are employed in the inspection service?

Mr. ABERSFELLER. In inspection we show 490 for 1968 and plan 490 for 1969.

Mr. EVINS. How many warehouses are materials stored in?

Mr. ABERSFELLER. We have 16 major warehouses.

Mr. EVINS. You have 490 inspectors and 16 major warehouses?

Mr. ABERSFELLER. Yes, sir. We have 20 million square feet of warehouse space, but I would like to explain that we do not do much of the inspection at the warehouse at all; rather we do it at the source of the manufacture. Most of the inspectors, three-fourths or more, are in the field visiting contractors and they do inspection there at the contractors' plants.

CATALOG ITEMS

Mr. EVINS. How many items are listed in your catalog?

Mr. ABERSFELLER. 40,000 items listed in the GSA stores stock catalog.

We have 16 million included in the total program. Most of the items are spare parts which are included in our schedule program. Of the 16 million items, about 700,000 are active major supply items.

Mr. EVINS. Are these items increasing?

Mr. ABERSFELLER. Yes, sir. We are continually having items transferred to us.

Mr. EVINS. The manufacturers want to sell you some of their new products because of the demand for them by the agencies?

Mr. ABERSFELLER. Yes, sir. We have many manufacturers who want

to sell new products. Year before last we started a new item introductory schedule which allows businessmen to place items on the schedule at a proper discount so they can sell it to the Government. After it has been on that schedule for a period of time we see if sales materialize and if the product has benefits. We then develop a specification so others can bid on the same general product and, having done that we put it in our supply system.

Mr. EVINS. Do you have any request for items you don't catalog or have on your list?

Mr. ABERSFELLER. Yes, sir. In our nonstores or direct order program we do buy many items.

Mr. EVINS. I thought GSA had everything. With all the items on your list you still find a need for more items.

Place pages II–5, II–7 II–8, II–11, II–13, II–16, II–19, and II–20 in the record.

(Documents referred to follow:)

OPERATING EXPENSES, FSS

1968 Appropriation	$68,500,000
Proposed supplemental (pay increase)	1,131,000
Transfers	2,150,000
1968 adjusted	71,781,000
Changes	+4,753,000
1969 estimate	76,534,000

GENERAL STATEMENT

"This appropriation provides for (1) establishment of efficient supply property management practices throughout the Federal Government, and (2) expenses of operating the worldwide supply system through which commercial-type commodities are sold to Government agencies and cost-type contractors from depot stocks, or by direct delivery from suppliers, whichever is more economical and meets the needs of the Government. Except for agencies orders placed directly with suppliers under Federal supply schedule contracts, most of the purchases of commodities are financed initially from the general supply fund, subject to reimbursement by ordering agencies. Wherever economical and feasible, costs of commodities furnished directly from suppliers are paid directly from funds of the requisitioning agency without involving the general supply fund. This appropriation also provides for the necessary expenses of carrying out Government-wide automated data management activities within the jurisdiction of the General Services Administration." (From the Budget for 1969.)

The estimate of $76,534,000 for fiscal year 1969 provides for an increase of $4,753,000 over comparable financing of $71,781,000 for fiscal year 1968. The amount for fiscal year 1968 consists of an appropriation of $68,500,000, a supplemental appropriation of $1,131,000 for increased classified pay cost and $2,150,000 transferred from defense supply agency in connection with elimination of duplication in the national supply system.

Of the total increase of $4,753,000 requested in fiscal year 1969 over fiscal year 1968, $2,250,000 is due to increased volume of supply support to Federal agencies worldwide. There are also increases of $645,000 in the Automated Data Management Service to accelerate the Government-wide ADP coordination functions assigned to GSA by 79 Stat. 1127, $887,000 in standardization, $933,000 in administrative operations to increase effectiveness of preventive audit and inspection activities, $12,000 in supply management, and $26,000 in service direction.

The estimate for 1969 includes $1,916,400 for total pay costs as a result of the Federal Salary Act of 1967.

Total volume of supply support through stores for fiscal year 1968 is estimated at $599 million compared to $615 million projected for fiscal year 1969. The military agencies will account for 79.5 percent of total stores volume in 1969 and

unit cost per $100 of volume will decline to $4.90. Depot unit costs have consistently declined from a high of $6.62 in fiscal year 1962. See chart on preceding page.

APPROPRIATION LANGUAGE

"For expenses, not otherwise provided, necessary for supply distribution, procurement, inspection, operation of the stores depot system (including contractual services incident to receiving, handling, and shipping warehouse items) and other supply management and related activities, as authorized by law, [$68,500,000] *$76,534,000.*"

1. SUPPLY DISTRIBUTION

	Amount	Average employment		
		Central office	Field	Total
1968	$35,167,000	105.2	2,474.4	2,579.6
Change	+1,428,000	+2.7	+89.7	+92.4
1969	36,595,000	107.9	2,564.1	2,672.0

HIGHLIGHTS

"Stocks of commercial-type commodities are received, warehoused, and issued on a worldwide basis to Federal agencies through a national supply distribution system consisting of both wholesale and retail distribution facilities. Stores stock sales reflect a continuous increase as follows: 1965, $343.9 million; 1966, $422.8 million; 1967, $526.8 million; 1968, estimated at $599 million; and 1969, estimated at $615 million." (From the Budget for 1969.)

JUSTIFICATION

	1967	1968	1969
1. Supply distribution	$32,485,353	$35,167,000	$36,595,000
(a) Distribution operations:			
Stores stock shipments (millions)	526.8	599.0	615.0
Unit cost per $100	5.15	4.93	4.90
Performance cost	27,113,621	29,558,000	30,154,000
(b) Space and related costs: Performance cost	5,371,732	5,609,000	6,441,000

1.a. Distribution operations.—Shipments from stores stock totaling $615 million, 2.7 percent above the program of 1968, will be shipped from depots, annexes, fuel yard, and retail self-service stores in 1969. Volumes projected herein are predicated on a continuation of supply support to military and civilian activities worldwide, but do not provide for any volume increases resulting from items which may be transferred to GSA from other agencies as a result of studies currently in progress.

During 1969 it is planned to activate the following eight additional self-service stores: two in Washington, D.C., and one each in Houston, Oklahoma City, Phoenix, Salt Lake City, Sacramento, and Los Angeles. This will bring to 60 the self-service type distribution points in operation by the close of 1969. It is estimated that of the total $615 million volume in 1969 $18 million will be realized through these retail type distribution outlets. A reduction in other agency operating costs of $3 million is estimated to result from the program in 1969.

Performance cost for distribution operations provides for operations of the depots, annexes, fuel yard, and self-service type outlets; related clerical order processing operations; and regional and departmental management of the entire program.

Unit costs per $100 in 1969 reflect an improvement of $0.03, despite increased costs of wage board rates and Federal Salary Act of 1967. Projected improvement in unit cost is based on increased employee productivity of 4.4 percent over the actual year 1967.

1.b. Space and related costs.—In 1969, this subactivity will require a total of

$6,441,000, an incerase of $832,000 from the 1968 programed costs. A large portion of the increase is due to the planned consolidation of East Point, Ga., and Albany, Ga., depot facilities into leased space at Atlanta, Ga. This consolidation will provide a more efficient operation resulting in better supply management.

2. PROCUREMENT

	Amount	Average employment		
		Central office	Field	Total
1968	$15,635,000	537.5	870.9	1,408.4
Change	+782,000	+12.7	+14.9	+27.6
1969	16,417,000	550.2	885.8	1,436.0

HIGHLIGHT

"Commodities are procured to maintain inventories at stores depots to insure availability in advance of sales orders and for direct delivery to agencies. Term contracts for commercial-type commodities and services are established for large aggregate volume requirements against which agencies place individual orders at uniform price advantages. Procurement in 1967 was $1,671 million; procurement for 1968 is estimated at $1,774 million; and 1969 procurement is estimated to reach $1,835 million. These volumes do not include automatic data processing equipment procurement of $375 million in 1967, $423.8 million in 1968, and $492 million in 1969." (From The Budget for 1969.)

JUSTIFICATION

	1967	1968	1969
2. Procurement	$14,166,848	$15,635,000	$16,417,000
(a) Stores buying:			
Volume of purchases (millions)	649.7	700.0	720.0
Unit cost per $100	1.37	1.41	1.43
Performance cost	8,886,100	9,842,000	10,260,000
(b) Nonstores buying:			
Volume of purchases (millions)	290.5	315.0	235.0
Unit cost per $100	1.18	1.21	1.23
Performance cost	3,414,987	3,812,000	4,004,000
(c) Federal supply schedules:			
Orders placed (millions)	730.8	759.0	790.0
Unit cost per $100	.26	.26	.27
Performance cost	1,865,761	1,981,000	2,153,000

a. *Stores buying.*—Approximately 37,000 items are included in stores inventory. The volume of purchase orders to be issued for stores stock replenishment and stores direct delivery in 1969 is $720 million, an increase of 3 percent over the 1968 program. Ninety-five million dollars is for direct delivery of stores items in 1969, an increase of 7 percent above the 1968 level. The increased unit costs for 1968 and 1969 are due to the Federal Salary Act of 1967.

There is a continuing need to carefully review the markets for products we purchase. This is especially important because of the need for improved procurement and inventory management for the 52 classes of commodities transferred from DOD, to assure continued timely supply to the Armed Forces, at the best possible prices. The chart on page II–12 graphically depicts savings in prices GSA paid for merchandise.

b. *Nonstores buying.*—Nonstores buying involves the contracting and purchasing of commodities for direct delivery from the contractors to the user. These purchases are for Federal agencies worldwide and are for items not contained in the GSA depot system such as motor vehicles, household and quarters furniture, fertilizer, and so forth. The volume of purchase orders to be issued for nonstores direct delivery in 1969 is $325 million, an increase of 3 percent above the 1968 program. Unit cost increases are due to the Federal Salary Act of 1967.

c. *Federal supply schedules.*—Federal supply schedules are indefinite quantity term contracts with prices firm and fixed throughout the term of the contract. Federal agencies use these contracts to place orders directly with the contractor and pay the contractor without any further reference to GSA, except in the event of a dispute. The dollar value of orders placed in 1969 is estimated at $790 million, an increase of 4 percent above the 1968 program. The unit cost increase is due to the Federal Salary Act of 1967.

An increase in the number of contracts providing additional sources of supply for items presently included in Federal supply schedules will result in an increase of about 6,700 lines on contract.

Savings approximating 2 to 3 percent resulting from improvements in productivity have been reflected in this budget. These savings will be used to get better contract terms, conditions, and prices in our procurement. This effect has already produced significant results. For example, a new contract for typewriters and other office machines has been awarded at a price almost 5 percent below last year. The estimated cost avoidance for Federal agencies is more than $600,000. In another case, bids have been received for magnetic computer tape at prices 50 percent below last year. The cost avoidance for agencies will be more than $6 million. The projected effect of these savings is shown on the preceding page.

Total procurement.—Procurement in 1967 was $1,671 million, procurement for 1968 is estimated at $1,774 million; and 1969 procurement is estimated to reach $1,835 million. These volumes do not include automatic data processing equipment procurement of $375 million in 1967, $423.8 million in 1968, and $492 million in 1969 which is accomplished by the automated data management services activity (No. 6 in this appropriation).

FISCAL YEAR 1969 TOTAL PROCUREMENT PROGRAM

	Procurement	Automated data management	Total FSS
Stores:			
For stock	$625,000,000	----------	$625,000,000
For direct delivery	95,000,000	----------	95,000,000
Total	720,000,000	----------	720,000,000
Nonstores direct delivery	325,000,000	73,000,000	398,000,000
FS schedules	790,000,000	419,000,000	1,209,000,000
Total	1,835,000,000	492,000,000	2,327,000,000

3. INSPECTION

	Amount	Average employment		
		Central office	Field	Total
1968	$5,589,000	64.7	376.4	441.1
Change	+40,000	−.8	−6.9	−7.7
1969	5,629,000	63.9	369.5	433.4

HIGHLIGHT

Timely delivery of commodities of specified quality is assured by inspection and surveillance at contractors' plants or supply depots, by laboratory tests and analyses of samples prior to acceptance, and by contract administration assistance. In 1969, quality control will inspect $720 million of stores items, $221.5 million nonstores items, and $79 million of items procured from Federal supply schedules. (From the Budget for 1969.)

JUSTIFICATION

	1967	1968	1969
Inspection	$4,763,252	$5,589,000	$5,629,000
(a) Stores:			
Volume inspected (millions)	649.7	700.0	720.0
Unit cost per $100	.58	.58	.57
Performance cost	3,792,400	4,083,000	4,128,000
(b) Nonstores:			
Volume inspected (millions)	187.9	220.4	221.5
Unit cost per $100	.39	.40	.39
Performance cost	740,300	874,000	866,000
(c) Schedules:			
Volume inspected (millions)	51.6	79.0	79.0
Unit cost per $100	.45	.80	.80
Performance cost	230,552	632,000	635,000

The primary objective of the quality control program is to insure that the items purchased comply fully with all technical requirements of contracts and are delivered in accordance with contractual provisions through field contract administration, including (1) preaward engineering-type evaluations of bidders' capability to comply with the contract; (2) working with contractors in planning and scheduling production; and (3) evaluating contractors' quality control systems. These activities are of particular importance to small businesses, many of whom are located in labor distressed areas, which might otherwise be unable to participate in Government business.

The quality control efforts in fiscal year 1969 will be devoted to inspection of delivered material valued at $720 million of stores items purchased; $221.5 million of the $325 million of nonstores purchased; and $79 million of materials purchased from manufacturers under 33 selected Federal supply schedules. The decreases in unit costs in 1969 in the stores and nonstores items are the result of a 2 percent productivity increase.

In fiscal year 1968 GSA added magnetic computer tape to its Federal supply schedule program. This material is critical because of precise technical requirements and the rapid growth of automatic data processing operations within the Government. This schedule is supported by a contract for the testing of tape under GSA supervision. The development of an improved and required specification to reduce the number of errors on mganetic tape and the inspection and testing of $15 million of such tape purchased by the Government will result in estimated savings of over $100 million in computer time.

Despite a 2-percent increase in productivity, the testing cost of magnetic tape, which we do by contract, resulted in a higher Federal supply schedule unit cost—from $0.45 per $100 inspected in fiscal year 1967 to $.80 in fiscal year 1968. In fiscal year 1969 a larger number of tests have been programed; however, the costs of increased requirements have been offset and absorbed by another projected 2 percent productivity improvement. As a result, the unit cost per $100 in fiscal year 1969 is estimated to remain at the same level as in fiscal year 1968.

4. SUPPLY STANDARDIZATION

	Amount	Average employment		
		Central office	Field	Total
1968	$3,774,000	292.0	----------	292.0
Change	+887,000	+44.1	----------	+44.1
1969	4,661,000	336.1	----------	336.1

HIGHLIGHT

"Qualitative requirements of Federal agencies are reflected in Federal specifications, Federal standards, and Federal item identifications which are mandatory for use in procurement. In 1969 the standardization program will consist of the promulgation of 967 Federal specification and standards actions and 215,000 cataloging actions. Plans for 1969 provide for a material evaluation and development laboratory to test new products and to develop and revise test methods used for acceptance inspection of items purchased by GSA, and to provide laboratory facilities necessary for the development and maintenance of specifications." (From "The Budget for 1969.")

JUSTIFICATION

	1967	1968	1969
Supply Standardization	$3,369,947	$3,774,000	$4,661,000
a. Specifications and standards:			
Actions	671	908	967
Unit cost per action	[1] $1,774	$1,765	$2,281
Performance cost	$1,620,441	$1,603,000	$2,206,000
b. Cataloging:			
Actions	150,964	185,000	215,000
Unit cost per action	$11.59	$11.74	$11.42
Performance cost	$1,749,506	$2,171,000	$2,455,000

[1] Does not include cost of automotive standards ($430,008) which was devoted to safety standards in fiscal year 1967 and not to production of specifications.

Specifications and standards.—Activity in this area consists of the development and issuance of specifications and standards which govern the character and quality of items procured by Federal agencies. These documents assure that in purchasing items for the Government, the following basic objectives are met:

(1) Assist small businesses in receiving their fair share of Government contracts,

(2) Provide for the needs of Federal agencies with adequate quality of merchandise supplied at the lowest cost, and,

(3) Provide for the greatest possible degree of competitive bidding.

An integral and essential part of a specification is the test method included to assure compliance. Formerly the necessary function of establishing these test methods was performed in great part for GSA by the National Bureau of Standards. Although the Bureau is still aiding GSA to some extent in product testing and evaluation (on a reimbursable basis), it has, however, phased out its activities with respect to the establishment of most test methods for specifications and standards. As GSA assumes increased supply support responsibility from DOD and other agencies, the need for laboratory facilities to develop and revise test methods becomes more and more significant. This problem is further compounded in view of the rapidly changing technology which increases the need for facilities to test new products. As a consequence this request provides for the expansion of laboratory facilities to meet these needs.

In the past, the specification requirements for many of our most important items reflect the fact that we are often buying products which have been developed and marketed as a result of intensive and highly technical research and development on the part of industry. In many instances it might be difficult for small businesses to meet the characteristics contained in the specifications. Frequently, however, many small businesses may have developed their own innovations which make them capable of turning out the products which can perform in the required manner. When a specification deals with design characteristics and materials contained in the products, it is difficult to keep such a specification current because of the rapid technological progress in American industry today. On the other hand, a specification which covers performance characteristics is easier to update and will also permit wider competition including more small businesses. However, in order to prepare such specifications, we need adequate laboratory facilities to design test methods to measure such performance and to prepare adequate descriptions of such performance. In addition to the increased competition that will result from such improved specifications and test methods, lower prices and improved products can be expected.

Cataloging.—Cataloging actions consist of uniformly identifying, describing, numbering, and keeping such information current within the Federal catalog system.

Included in the cost of cataloging are the expenses related to the item entry control system in use in GSA which limits the number of new items entering the supply system and the expenses related to studies to eliminate items from the supply systems of other agencies, thereby reducing inventory investment and space costs.

SMALL BUSINESS PROCUREMENT

Mr. EVINS. I think GSA has one of the best records in small business. More than 50 percent of the contracts are awarded to small business. This is the highest agency of the Government.

How are you able to inject competitive bidding in items needed by the Government?

Mr. ABERSFELLER. We do this first through the development of the specification which allows every one to bid on the same basis and then, of course, ask for bids.

We have business service centers throughout the country. These people devote a good deal of time to getting competition for us and they have been very helpful in getting small businessmen and others to bid on the material we buy. We have been reasonably successful in keeping the price in line as I mentioned a moment ago on magnetic tape, although that did not go to small business. In that particular case, the specification cost was over a million dollars to develop but we saved $8.6 million, so that specification has more than paid its way.

Mr. JONAS. Is there that much difference in magnetic tape?

Mr. ABERSFELLER. Yes, sir.

SUPPLY MANAGEMENT

Mr. EVINS. I think there is nothing wrong in placing on the record that GSA examined various products and found them not up to quality standards. We commend you for this and hope you will continue it.

This item, supply management increases by $12,000.

Mr. ABERSFELLER. That is annualization of our current on-board employment, Mr. Chairman.

AUTOMATED DATA MANAGEMENT

Mr. EVINS. Automated data management increases by $645,000?

Mr. ABERSFELLER. Yes, sir.

Mr. EVINS. Average employment is up 17. Now, we thought when you purchased automatic data processing equipment, it was less expensive and you needed less employees, but we always see it goes up. This program is still in the development phase; however, you say it has already made significant contributions to efficiency. During 1967 the Government realized a cost avoidance of $28 million; how did you calculate that?

Mr. ABERSFELLER. We calculated it from the reports we get from the agencies we serve and also from the regional coordinators, our people in the field——

Mr. EVINS. Goals of $30 million and $34 million have been set for 1968 and 1969. Do you believe you can achieve this?

Mr. ABERSFELLER. Yes, sir.

EQUIPMENT REUTILIZATION

Mr. EVINS. Equipment costing $26 million was redistributed among Federal agencies and an additional $43 million was redistributed within the Department of Defense. What do you mean redistributed?

Mr. ABERSFELLER. Redistributed to another agency having a need thereby avoiding new procurement. For example, Mr. Chairman, last week we transferred a piece of equipment from an Army unit to Vietnam.

Mr. EVINS. Is the continuing goal to redistribute them?

Mr. ABERSFELLER. Of course the agencies have this equipment as you know and we simply serve as a catalyst to find the fellow who needs something that another agency doesn't need any longer.

Mr. EVINS. What are your plans?

Mr. ABERSFELLER. We expect to do two things. One is to keep up the redistribution program, and the second is to bring some influence to bear on the agencies acquiring additional pieces of equipment so as to avoid new procurement.

Mr. EVINS. Wouldn't that be more efficient?

Mr. ABERSFELLER. That particular part has to do with leasing equipment which is perfectly satisfactory, whether it is leased from the original equipment manufacturer or not; but by leasing from a leasing company, we can save between 20 and 25 percent.

COORDINATION OF COMPUTER PROCUREMENT

Mr. EVINS. Do agencies generally consult with GSA before they make a purchase?

Mr. ABERSFELLER. Yes, sir; they do now. Last year we reported they did not. On November 21 the Comptroller General ruled that GSA had exclusive authority for ADP in Government; since that time we have had no further difficulty and all the ADP procurement is being coordinated with us.

Mr. EVINS. What are your future plans?

AIR FORCE NEGOTIATION

Mr. ABERSFELLER. As an example, Mr. Chairman, we helped the Air Force and negotiated a contract for their phase II program which was for 100 to 160 computers. You may recall the Honeywell Co. had protested the proposed award to IBM by Air Force. The Comptroller General overruled that proposed award and asked that negotiations be reopened. We negotiated that case for the Air Force and helped the Air Force save $36 million, with about 4 months' work on the part of four people. And we plan to continue to do a great deal of that sort of thing.

The Defense Department has asked us to help them in negotiation for a new series of equipment for the worldwide command and control network and also for defense logistics support center new equipment. These two procurements should total somewhere in the neighborhood of $200 million, and that is the kind of thing we seek additional funds for.

SERVICE DIRECTION

Mr. EVINS. You are asking for an increase of $26,000 for operating expenses for service direction. Jobs go from 85 to 88. This office provides for the Office of the Commissioner, Federal Supply Service, in the central and regional offices, and the cost of postage for the entire FSS operation, based on rates concurred in by the Post Office Department?

Mr. ABERSFELLER. Yes, sir.

CONSULTATION WITH GEOLOGICAL SURVEY ON SITE SELECTION

Mr. MARSH. I have two sets of questions. I have been attending a Committee on the Interior which has the Geological Survey which gets into the question of construction.

What coordination are you effecting with the Geological Survey prior to and during the construction of a facility in order to come to grips with this observation about your programs contained in the report of the Comptroller General dated May 25 that you had selected sites without adequate soil samples and this had resulted in not only loss but perhaps risk of inferior construction?

Mr. KNOTT. Well, perhaps I can answer that. We have added a soils specialist to our staff who works with the Geological Survey people wherever needed. We also employ local architects who have experience in the area and are presumed to know something about where there are problems.

Mr. MARSH. Did you check with the Soil Conservation Service or the Geological Survey before any of the site construction facilities were set out in this report?

Mr. KNOTT. I don't know what projects particularly are in the report. I recall the report. I recall we agreed that we needed additional staffing along that line.

Mr. MARSH. Why is the response always that we need additional staffing whenever criticism is noted?

Now, there is considerable resources in the Federal Establishment, both in the Geological Survey and in the Soil Conservation Service, to have a great deal of experience and expertise in soil—soil composition. Why don't you coordinate with and make liaison with these agencies before you employ new staff?

Mr. KNOTT. We do to the extent we can but this could be said about the Bureau of Standards and all the testing that we do for our Federal supply operations and yet they told us categorically that they are not in a position to perform that service for us.

Mr. MARSH. But did you go to the Geological Survey before the report of May 25 and ask for their recommendations, if any, on sites?

Mr. KNOTT. I am not prepared to say as to the particular sites, Mr. Marsh, if you are asking me whether we did or did not on each of them.

Mr. SCHMIDT. Yes; we were doing it before this report. As a matter of fact, I think there are cases that we did consult with and I don't think any GAO report was ever written comprehensive enough to cover the whole picture. They may take a sample and take up the cases that reveal the omission and those are the ones they refer to but they don't cite the hundreds of cases where we may have had no difficulty or where we did in fact consult them. We consulted on the National Training School site which we examined for a new Govern-

ment Printing Office building. We consulted on conditions at Fairbanks and Anchorage, Alaska, and on Lafayette Square here in Washington. I might say this, that GAO insisted that we employ a soil expert on our staff and we felt we could go along with them because we needed someone on the staff with expertise in this field to examine the reports and other records received by us on specific sites.

Mr. MARSH. In reference to this, don't you think it would be a good idea to ask them if they have any recommendations or if they have done site work or have done test work in these areas as a matter of routine before you begin with your construction?

Mr. KNOTT. Yes, we can do that and intend to do that from here on out.

Mr. MARSH. But apparently you weren't doing it before the 25th of May 1967?

Mr. SCHMIDT. Not on all of those specific sites.

GEOLOGICAL SURVEY RECOMMENDATIONS

Mr. MARSH. To what extent in your plans and specifications have you taken into account the recommendations of the Geological Survey in reference to earthquake-type of preventive construction?

Mr. SCHMIDT. Only for projects we design in the so-called seismic areas. We design for earthquake stresses in our structures where required.

Mr. MARSH. Is that in your specification?

Mr. SCHMIDT. This is in the specification.

Mr. MARSH. What coordination do you have with the Geological Survey in reference to that?

Mr. SCHMIDT. Well, I would say we are using their basic data which designates the areas throughout the United States.

Mr. MARSH. What is the last recommendation that you have from them in reference to earthquake construction and earthquake protection?

Mr. SCHMIDT. In connection with a specific project?

Mr. MARSH. Generally or in connection with any——

Mr. SCHMIDT. I can't furnish the answer. Mr. Foster.

Mr. FOSTER. Only 3 weeks ago our design people went to the Geological Survey in the same building as we are and got an updated map of the United States showing seismic areas to check against our guide specifications.

GAO REPORT ON DISTRICT OF COLUMBIA CONSTRUCTION

Mr. MARSH. In reference to construction in Washington they—Geological Survey—point out recently receiving additional requests and I realize these are examples of base operations but secondly you get into the areas which the Comptroller General made reference to in the May 25, 1967, report, of another serious nature and that is inadequacy of certain foundation work that has occurred principally in cement and the quality of the cement on some of your construction sites and in that letter I quote in the fourth paragraph:

> Review discloses inspection procedure by General Services Administration did not insure compliance with contract specification with regard to water content of concrete delivered to construction site.

And they go on and site several other examples which are enumerated in the record.

Now, I am sure you will agree when you begin to get into questions of foundation structure and concrete work you are in rather serious area from the standpoint of inferior work. What are your comments in reference to that observation?

Mr. KNOTT. I will get back to the comment you made about always asking for additional personnel and not seeking the help of Federal agencies. We have made a nationwide concerted effort for more than 4 years to get the Corps of Engineers which has 43 districts around the country, to undertake the construction supervision of many of our projects and they have supervised some of them but by and large we find their costs are higher than our own costs if we can provide the personnel ourselves. And they frequently do not have the personnel available for our needs. However, it does require more adequate personnel than we have provided.

We admitted to the Comptroller General in response to that letter that we had not provided enough of the various types of skilled personnel required. In other words, you can't expect to have a structural engineer who is an expert on soils, for example. Not necessarily. You may have them qualified in one or two fields, but you have to be able to bring to bear at each propect at the particular time the expert supervision when the specific work is being performed. We have been penurious at various times in the kind of money we have been willing to spend for construction supervision. We think that is wrong. We had a retired admiral of the Navy, a retired Army engineer, and one of our own retired design and construction officials who made 50 recommendations after studying our nationwide construction program. This is one of the best and most inexpensive studies I know of that has been made in the construction field, and we have every one of those recommendations scheduled for implementation by June 30 of this year. This includes beefing up construction supervision and changes in our levels of supervision in the field and training of employees for that kind of work.

FEDERAL SERVICE COORDINATION

Mr. MARSH. I would agree that you people are caught in a rather difficult situation of having to be experts in a broad range of fields but it would seem that if you could spearhead some type of coordination throughout the Federal services and draw on the resources of the Federal service, it might be helpful and I think your suggestion on the Corps of Engineers could be a very good one.

They point out here some of the inspection standards that you had in adequate personnel which you have mentioned; could you for the record furnish response to the items set out in both of these two records I have mentioned to you?

Mr. KNOTT. You mean response we made to the Comptroller or any response we might want to direct to these two items I have mentioned.

Mr. MARSH. Any response you might want to make. I think it would be helpful to have that in the record.

(The information requested follows:)

Report to the Congress of the United States, by the Comptroller General of the United States, dated May 25, 1967, entitled: "Review of Subsurface Exploration for and Design and Construction of Foundations of Public Buildings".

While GSA agreed with the conclusions of the Report, nevertheless, the problems encountered by the Government in this area differ little, if any, from that of the private sector. However, firm actions have been taken to minimize the problems experienced in foundation design and unanticipated soil conditions. Actions taken include (1) a requirement that site selection be made only after investigation of subsoil conditions and determination of suitability in the light of findings; (2) expanded use of contract soils and foundation experts on major projects; (3) utilization of services of soils experts now available in other Government agencies, e.g., Geological Survey, Bureau of Public Roads, etc., and (4) GSA's in-house capability has been expanded for review and evaluation of consultant's reports and site conditions by the employment of a Soil Specialist (Civil Engineer). This latter action is a means whereby GSA can quickly react to problems arising during construction and can more authoritatively evaluate contractor's demands for additional compensation based on claims of changed subsurface conditions.

Report to the Congress of the United States, by the Comptroller General of the United States, dated May 25, 1967, entitled: "Review of Inspection Controls Over Concrete Placements in Building Construction Projects."

The General Accounting Office report disclosed that GSA inspection procedures and controls did not insure compliance with contract specifications in regard to concrete delivered to one of three construction sites (Lafayette Square) in Washington, D.C. The report recognized that the concrete met strength requirements, but that quality was not limited to characteristics of strength. Discrepancies were found to exist in the use of concrete curing compound and in the performance of concrete testing. Also, the quality of onsite inspection varied between construction sites.

GAO recommended that action be taken to strengthen controls over onsite inspection of construction work; that frequent and systematic reviews be made by higher officials; that recording standards for onsite construction inspectors be improved; and that laboratories engaged in concrete testing be directly responsible to the Government rather than the contractor.

GSA concurred in the GAO recommendations. To insure that concrete placement specifications are being complied with, greater emphasis is being placed upon onsite construction supervision; additional onsite supervision staffing has been authorized; and, an onsite construction supervision training program has been inaugurated. Construction supervision staffs are being realined and new staffing implemented as additional employees can be recruited and new supervision contracts negotiated. An amendment to the PBS guide specifications on concrete strength testing has been published, to be incorporated in future construction project documents. A new field inspector's manual for all facets of construction, including instructions on recording and reporting, as well as describing inspection techniques and processes, is in preparation.

TIRE TESTING

Mr. MARSH. And, finally, in reference to tire testing, are you using both—do you continue to use static test exclusively or with the road test?

Mr. KNOTT. I believe we are using both.

Mr. ABERSFELLER. We use both and in addition use dynamic test. Nylon shows up better under the static plunger test.

Mr. MARSH. You are using road tests?

Mr. ABERSFELLER. Yes, sir.

Mr. MARSH. And don't you feel it is better to use a series of tests rather than one single test?

Mr. ABERSFELLER. Certainly, Mr. Marsh. Rayon gains strength with heat. Nylon generally does not. We always gave preference to rayon in specifications. The requirement on the static plunger test is that rayon only had to perform half as well as nylon for that reason.

Mr. MARSH. I thank the agency because I think it is very helpful to industry and I appreciate the openmindedness in doing this and if you set up some sort of coordination with the other agencies where you can.

Automatic Data Processing Revolving Fund

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	Operating costs, funded:			
	1. Lease program		50	264
	2. Service centers			55
	3. Personnel pools			110
	Total operating costs, funded		50	429
	Capital outlay, funded:			
	1. Lease program		6,712	2,800
	2. Service centers			2,000
	Total capital outlay, funded		6,712	4,800
10	Total program costs, funded—obligations		6,762	5,229
	Financing:			
11	Receipts and reimbursements from: Federal funds:			
	Lease program		−370	−1,951
	Service centers			−55
	Personnel pools			−110
21	Unobligated balance available, start of year			−3,608
24	Unobligated balance available, end of year		3,608	495
40	New obligational authority (appropriation)		10,000	
	Relation of obligations to expenditures:			
10	Total obligations		6,762	5,229
70	Receipts and other offsets (items 11–17)		−370	−2,116
71	Obligations affecting expenditures		6,392	3,113
72	Obligated balance, start of year			3,892
74	Obligated balance, end of year		−3,892	200
90	Expenditures		2,500	7,205
	Expenditures are distributed as follows:			
01	Out of current authorizations		2,500	
02	Out of prior authorizations			7,205

REVENUE, EXPENSE, AND RETAINED EARNINGS (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimate	1969 estimate
Lease program:			
Revenue		370	1,951
Expense		370	1,951
Net operating income, lease program			
Service centers:			
Revenue			55
Expense			55
Net operating income, service centers			
Personnel pools:			
Revenue			110
Expense			110
Net operating income, personnel pools			
Net income for the year			

FINANCIAL CONDITION (IN THOUSANDS OF DOLLARS)

Assets:			
Treasury balance		7,500	295
Accounts receivable, net		154	400
Fixed assets		6,392	9,505
Total assets		14,046	10,200
Liabilities: Current (total liabilities)		4,046	200
Government equity: Non-interest-bearing capital:			
Start of year			10,000
Appropriation		10,000	
End of year (total Government equity)		10,000	10,000

ANALYSIS OF GOVERNMENT EQUITY (IN THOUSANDS OF DOLLARS)

Unobligated balance	3,608	495
Invested capital and earnings	6,392	9,505
Total Government equity	10,000	10,900

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	Personnel compensation:		
11.1	Permanent positions		99
11.3	Positions other than permanent		36
	Total personnel compensation		135
12.0	Personnel benefits		10
23.0	Rent, communications, and utilities		7
24.0	Printing and reproduction		2
25.1	Other services	50	267
26.0	Supplies and materials		10
31.0	Equipment	6,712	4,800
99.0	Total obligations	6,762	5,229

PERSONNEL SUMMARY

Total number of permanent positions	74
Full-time equivalent of other positions	7
Average number of all employees	18
Average GS grade	5.6
Average GS salary	$6,588

Mr. EVINS. The automatic data processing fund. No new funds for 1969.

Mr. ABERSFELLER. We have not bought any new equipment with the fund but devoted the limited resources to buying that equipment which was in use and leased. I might point out that we are about to buy a piece of equipment, a Burroughs 5500, which is a large system. We will pay $991,000 for that system and that will save $2,800,000 over a 5-year period. We have already bought for the Patent Office and Labor two systems of equipment at a cost of $867,000, which will save $1.3 million over a 5-year period.

ESTIMATED SAVINGS

Mr. EVINS. Estimated savings are $1.3 million. How did you arrive at the estimated savings?

Mr. ABERSFELLER. These figures are based on what we had to pay for the equipment compared to what the agency lease costs were and would have been. That presumes no increase in lease costs which puts the savings on a very conservative basis because lease costs have been going up.

As an example, in one case, Patent Office is using a Honeywell 1200; we paid $250,000 for that piece of equipment and Patent Office had been paying annual lease costs of $104,000.

EQUIPMENT REUTILIZATION

Mr. EVINS. In another place you testified you have a hundred million dollars' worth of equipment turnover and have to redistribute it elsewhere. Is it that this equipment is not satisfactory?

Mr. ABERSFELLER. No, sir; it isn't a question of being not satisfactory. Just a question—in some cases the agencies no longer need the equipment and we transfer it to another agency to avoid new procurement.

Mr. KNOTT. I think the term is confusing. Redistribution—you think of actually picking up and lifting, moving it somewhere else, which is not always the case.

It's a matter of an agency no longer needing it. We locate it elsewhere or it is used right where it is by another agency.

Mr. EVINS. How long do agencies keep this equipment before you have to redistribute?

Mr. ABERSFELLER. It would depend, but most agencies keep equipment at least 6 years. In some cases we are redistributing equipment to other users, which was bought 15 years ago. This avoids new procurement. Last year we transferred some first-generation vacuum tube equipment to universities. This saved those universities from having to go out and lease the equipment.

SUPPLY STANDARDIZATION

Mr. EVINS. Very good. I am sure the universities are pleased to get this.

Back to Federal Supply Service standard, are you planning on building a new laboratory?

Mr. KNOTT. We are planning to expand the laboratory we have at the National Bureau of Standards site.

Mr. EVINS. Plans for 1969 provide for a material evaluation and development laboratory.

Mr. ABERSFELLER. That is correct. And we have a laboratory at the old National Bureau of Standards site.

Mr. EVINS. Is it your laboratory?

Mr. ABERSFELLER. It is our laboratory.

Mr. EVINS. And you need to expand it?

Mr. ABERSFELLER. Yes, sir.

Mr. EVINS. How much is it going to cost?

Mr. ABER.PELLER. About a half million dollars.

Mr. JONAS. You are using all the facilities at the former site?

Mr. ABERSFELLER. Not all of them.

Mr. JONAS. Why can't you use some of them?

Mr. ABERSFELLER. They have moved some of the equipment.

Mr. KNOTT. We are not planning to construct any building. We are using a whole building that was turned over to us.

UTILIZATION OF BUILDINGS

Mr. JONAS. Who uses the other buildings?

Mr. KNOTT. Temporary use is going to be made by the Federal city college or institute, one of the two community colleges set up. They are going to use the main building.

Mr. EVINS. How are you going to turn it over to them?

Mr. KNOTT. These are institutional-type buildings with very little office space in them and this institute will actually be using some of these laboratory-type buildings for the training of people in trades. Now, this is only for a maximum of 5 years, a 3- to 5-year period until they get a permanent facility built.

Mr. EVINS. Will that be all the space available at that site?

Mr. KNOTT. The Army Ordnance Fuze Laboratory is still active

there. They are planning to relocate to White Oak Naval Station but that has to be built. That hasn't even begun. They are using everything they have and the Bureau of Standards is still using one or two buildings they have not released, but everything south of Van Ness Street has been released. We have one agency, Department of the Interior, Geographic names, using one of the buildings temporarily.

Mr. JONAS. All are being utilized, though?

Mr. KNOTT. Yes.

USE OF LABORATORY FOR DEVELOPMENT OF PAINT

Mr. ABERSFELLER. As an example, Mr. Chairman, one of the commodities the laboratory will work on is paint. We pride ourselves on what we are paying for paint. We remarked before we are getting 50 to 75 percent of wholesale prices, but we may need to have higher quality paint. Paint cost represents only about 15 percent of a paint job; labor is the rest. If we can develop a paint, which we think we can, which would last 6 years instead of 3 years, we would save a lot of money in the application of paint.

Further than that, to be eminently fair to all people we do business with, we need to improve specifications to help small business.

PROCUREMENT OF PAINT FOR NAVY

Mr. EVINS. Does GSA buy paint for the Navy?

Mr. ABERSFELLER. Yes, sir.

Mr. EVINS. It seems that you would have to make a sample test.

Mr. ABERSFELLER. We have done that, and our paint does measure up to regular quality, Mr. Chairman, but one company put out a new paint and it is $12 a gallon commercially.

Mr. EVINS. Is there competition in the paint industry?

Mr. ABERSFELLER. Yes, but we don't get name producers to bid. Most of them are other than brand-name producers.

Mr. EVINS. Therefore, it is incumbent upon you to test it?

Mr. ABERSFELLER. Yes, sir.

PAINT SPECIFICATIONS

Mr. EVINS. Can you draw a specification for certain standard quality in paint?

Mr. ABERSFELLER. Yes. Some of the things the laboratory develops are better test methods. We got some paint, went through all this and inspected it, but later found that we didn't have the proper piece of equipment to do some additional testing and that was $80,000 worth of paint lost.

The paint didn't have any plasticizer, we didn't have the equipment to check it, and the specification did not require a check for that particular characteristic.

Mr. JONAS. The Navy has been buying paint for 150 years. Haven't they found that out before now?

Mr. ABERSFELLER. No, sir; they haven't.

Mr. JONAS. You should discover something they haven't, as much paint as they use.

Mr. EVINS. What others, besides tires and paints?

Mr. ABERSFELLER. We hope to do a good deal of work in detergents. We do buy and sell a lot of detergents.

NBS TESTING

Mr. EVINS. Why don't you let the Bureau of Standards do some testing?

Mr. ABERSFELLER. We offered it and they don't have the resources. They are happy to do things for us if we will pay them but they charge 50 to 100 percent overhead for any job they do.

CONTRACT RESEARCH

Mr. JONAS. You don't think you get as good service by contracting this out?

Mr. ABERSFELLER. We do contract some research out. We tried on tile coating and it was nothing but trouble. Two of the producers claimed the fellow we contracted with was biased and in favor of some other company, and frankly it got so bad we weren't too certain whether he was biased or not; but you have to have a referee. You have to have someone whom you have great confidence in. Now, that isn't to say we don't have confidence in some testing companies; last year we contracted for inspection of automobiles to see if they complied with safety standards and it worked out great. We have done some work with outside contracts but it is complicated.

BRAND-NAME PRODUCTS

Mr. EVINS. You are a good businessman and I commend you. But you state that you don't buy brand names. Maybe you wouldn't have to spend so much on testing if you purchased brand names.

Mr. ABERSFELLER. First you have to have a specification, to determine what is standard. The chairman mentioned Sherwin Williams but this would work a disadvantage to small business. As you said earlier 50 percent of our buying is from small business; small business, by and large, has given us high quality and it has only been because of the specification route they have been able to compete with high-quality merchandise, so we think we would do serious harm to that program if we went on brand-name basis.

In fact, our policy has been for years now to get off brand names. There are times, however, we have to cite brand names.

JUSTIFICATION MATERIAL

Mr. EVINS. We will insert the justification summaries for supply management, automated data management services, and service direction of the FSS along with the justification for the automatic data processing revolving fund.

(Documents referred to follow:)

5. SUPPLY MANAGEMENT

	Amount	Average employment		
		Central office	Field	Total
1968	$1,288,000	62.9	19.5	82.4
Change	+12,000	−.2	−.1	−.3
1969	1,300,000	62.7	19.4	82.1

HIGHLIGHT

"In 1969, supply management activities will continue to make studies and recommendations on the supply systems of Federal agencies. Continued emphasis will be placed on priority support requirements of the Agency for International Development's programs in Southeast Asia and agreements between GSA and the Department of Defense on the governing of supply management relationships." (From the Budget for 1969.)

JUSTIFICATION

National supply system activities for fiscal year 1969 will give emphasis to the delineation of responsibilities and establishment of relationships between the Department of Defense, GSA, and other civilian agencies in the effective and economical management and supply of commodities and services. Actions are taken toward assisting agencies to improve their supply policies, procedures, and systems. For example, guidelines are provided to agencies in the development of inventory requirements, safety levels, and adjustments. Supply management studies will be continued and additional studies initiated of the supply operations within selected agencies such as the Alaska Railroad, Bonneville Power Administration, Panama Canal Company, Tennessee Valley Authority, and the FAA.

Effective at the beginning of fiscal year 1968, arrangements were concluded to transfer 52 classes of merchandise from the Department of Defense to GSA for central management. GSA and the Defense Supply Agency will jointly review commodities assigned by DOD for centralized management by DSA to determine those which should be managed by GSA for all agencies, both military and civilian, and those which should continue to be managed by DSA.

Emphasis will also be placed on priority support of requirements for other agencies' programs in Southeast Asia.

The design and installation of additional improvements in the nationwide GSA supply data system will be continued to achieve appropriate compatibility of this system with DOD systems and the civilian agencies systems to assure effective supply actions and necessary responsiveness.

6. AUTOMATED DATA MANAGEMENT SERVICES

	Amount	Average employment		
		Central office	Field	Total
1968	$1,145,000	53.1	15.8	68.9
Change	+645,000	+17.3	----------	+17.3
1969	1,790,000	70.4	15.8	86.2

HIGHLIGHT

"During 1969, the personnel assigned to this function will be utilized for the purpose of studying and designing ADP service centers as well as keypunch and programer pools, all for multiagency use; conducting feasibility studies to determine economical acquisition of Federal Governemnt ADP equipment now being leased; identifying and utilizing excess and surplus ADP equipment thereby minimizing the purchase of such equipment; and contracting for procurement of an estimated $492 million of automatic data processing equipment." (From The Budget for 1969.)

JUSTIFICATION

GSA has the responsibility for developing and operating a Government-wide program that will prvide econmic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing eequipment by Federal departments and agencies.

This program is still in the developmental phase; however, it has already made significant contributions to overall Government efficiencies and economies through the following cost avoidance actions:

A. During fiscal year 1967 the Government realized a cost avoidance of $28 million as a result of the ADP joint utilization program. Goals of $30 million and $34 million have been set for fiscal year 1968 and 1969 respectively.

B. Equipment which originally cost over $26 million was redistributed among Federal agencies in fiscal year 1967 and an additional $43 million was redistributed within the Department of Defense through the ADP excess reutilization program. A goal of $100 million has been set for fiscal year 1968 and $105 million for fiscal year 1969.

C. GSA has negotiated improved Federal supply schedule contractual terms and prices with equipment manufacturers resulting in significant benefits and economies to the Government.

D. GSA has encouraged and/or arranged for the leasing of equipment from other than original equipment manufacturers at substantial savings.

E. GSA assisted BOB in the design of the present management information system by providing guidance, interpretation, and assistance to agencies; receiving and controlling agency inputs; and providing programing and machine processing of Government-wide MIS reports.

Certain functions currently being performed by this activity will continue to be accomplished in fiscal year 1968 and 1969. These functions, together with additional objectives for these years, are as follows:

A. ADP contracting and procurement functions are now being accomplished by this activity. ADP equipment orders in fiscal year 1967 amounted to $375 million and are estimated at $423.8 million and $492.0 million respectively for 1968 and 1969.

B. Economic feasibility studies will be continued, leading toward establishment of equipment pools and service centers for multiagency use.

C. Sources of ADPE maintenance service will be studied to determine whether in-house or sources other than individual ADPE suppliers would be most beneficial for the Government.

D. Continuing efforts will be made to fulfill GSA's responsibility for maintaining, revising, and updating the Government-wide ADP management information system as directed in the BOB policy letter dated May 4, 1966, and the amendment thereto dated June 30, 1967, and the BOB Circular A–83.

E. Procurement assistance to individual agencies will continue to be provided, including assistance in their development of requests for proposals; taking the lead in negotiating terms, conditions, and prices; and awarding of contracts either within the framework of the Federal supply schedules or otherwise.

F. Insure that the procurement of equipment or services is made from the source affording the best price advantage to the Government, recognizing that Federal agencies will determine their individual ADP requirements and will be responsible for the use of the equipment.

G. Assist Federal agencies in taking advantage of any opportunity to substitute excess Government-owned equipment for similar equipment being rented or leased, and to use excess equipment to avoid procurement of new equipment.

H. Progressively expand the ADP sharing exchange program in order to increase the effective use of existing equipment and services.

The increase of 16 positions in 1969 is attributable primarily to the increased emphasis which will be placed on maintaining, revising, and updatng the Government-wide ADP management information system, and on ADP procurement assistance to Federal agencies.

7. SERVICE DIRECTION

	Amount	Average employment		
		Central office	Field	Total
1968	$1,914,000	32.8	52.6	85.4
Change	+26,000	+.8	+2.4	+3.2
1969	1,940,000	33.6	55.0	88.6

HIGHLIGHT

This activity provides for the Office of the Commissioner, FSS, in the central office, Office of Regional Director, FSS, in each of the regional offices, and cost of postage for the entire FSS operation, based upon rates concurred in by the Post Office Department for the various categories of mail.

	1967	1968	1969
Service direction	$1,802,668	$1,914,000	$1,940,000
Program direction	1,129,668	1,241,000	1,267,000
Postage fees	673,000	673,000	673,000

EXPLANATION OF DISTRIBUTION BY OBJECTS

11 *Personnel compensation and staffing, $1,043,000.*—For 90 positions distributed as follows:

	1967	1968	1969
Central office	34.0	34.0	35.0
Field	53.0	56.0	55.0
Total positions	87.0	90.0	90.0
Average employment	86.1	85.4	88.6

12 *Personnel benefits, $79,000.*—$67,900 for direct contribution to retirement fund, $3,500 for group insurance, and $7,600 for health benefits.

21 *Travel and transportation of persons, $39,000.*—Includes $33,000 for 1,100 days travel necessary for the Commissioner, Deputy Commissioner, regional directors and other service direction personnel for management of the worldwide supply program, and $6,000 for motor pool travel in connection with such travel.

22 *Transportation of things, $2,000.*—For movement of household goods of permanently transferred employees.

23 *Rents, utilities and communications services, $718,000.*—Includes $673,000 for postage fees, $43,000 for telephone and teletype services, and $2,000 for equipment amortization.

24 *Printing and reproduction, $15,000.*—For general printing and photographic reproduction related to the overall direction of the Federal supply program.

25 *Other services, $36,000.*—Includes $8,000 for payments to commercial contractors, $5,000 payments to other Government agencies, and $23,000 for other miscellaneous service.

26 *Supplies and materials, $8,000.*—For office supplies.

AUTOMATIC DATA PROCESSING REVOLVING FUND

GENERAL STATEMENT

"The automatic data processing fund authorized by Public Law 89-306 finances a Government-wide automatic data processing operation including the procurement and maintenance of equipment, operation of service centers, and personnel resource pools. The fund will be reimbursed by Federal agencies for services rendered.

The estimate provides for the continued procurement of installed leased equipment, when economically feasible, for use by Federal agencies and the initial effort in the establishment and operation of service centers and personnel pools.

1. *Lease program.*—The fund finances the purchase of ADP equipment for use by Federal agencies when economical purchases can be made of installed leased equipment. Reimbursement by Federal agencies recovers the depreciation on the equipment plus the cost of operating the lease program. Revenue is estimated to increase from $370,000 in 1968 to $1,951,000 in 1969.

2. *Service centers.*—The service centers will contain ADP equipment available for use by all Federal agencies. Revenue is anticipated to be $55,000 in 1969.

3. *Personnel pools.*—The personnel pools will have personnel available for key punching, programing, and analytical work for all Federal agencies. Revenue from this activity is anticipated to be $110,000 in 1969." (From the Budget for 1969.)

AUTOMATIC DATA PROCESSING REVOLVING FUND

COMPARATIVE STATEMENT OF CAPITAL AND FINANCING

[Dollar amounts in thousands]

	As of June 30		Change from 1968	Remarks
	1968 estimate	1969 estimate		
A. Financing available:				
1. Capital provided by appropriation:				
(a) Start of year		$10,000	+$10,000	No additional capital is being requested in fiscal year 1969. Appropriated capital of $10,000,000 provided in fiscal year 1968 is being utilized for procurement of computer systems and establishment of service centers and personnel pools.
(b) During year	$10,000		−10,000	
(c) Total appropriated	10,000	10,000		
B. Application of financing:				
1. Assets:				
(a) Working cash	7,500	295	−7,205	Cash of $295 reflects the balance required to insure prompt payment of bills after providing for procurement of computer systems.
(b) Accounts receivable	154	400	+246	Receivables based on an estimated 60-day collection cycle.
(c) Equipment (net)	6,392	9,505	+3,113	Net change in equipment of $3,113 from fiscal year 1968 to fiscal year 1969 results from the following: Equipment purchases of $4,800, less depreciation of $1,687, equals net additional equipment change of $3,113.
(d) Total assets	14,046	10,200	−3,846	
2. Deduct:				
(a) Accounts payable	4,046	200	−3,846	Decrease in payables during fiscal year 1969 of $3,846 results from payment for computer systems purchased in fiscal year 1968.
3. Total financing applied, net	10,000	10,000		

General Supply Fund

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
Operating costs, funded:			
1. Supply operations:			
(a) Stores, regular	529,146	599,000	615,000
(b) Stores, direct delivery	71,630	89,000	95,000
(c) Nonstores items	219,018	266,000	274,000
2. Export operations	41,877	51,600	53,200
3. Rehabilitation and repair of furniture and equipment	907	900	900
4. Motor pools	35,718	37,290	37,195
Total operating costs, funded	898,296	1,043,790	1,075,295
Capital outlay, funded:			
1. Supply operations:			
(a) Stores items: Purchase of materials handling and laboratory equipment	1,787	2,800	3,390
(d) Purchase of ADP equipment	2,483	3,981	730
(e) Purchase of administrative equipment	1,183	1,033	1,033
4. Motor pools: Purchase of equipment	6,352	29,119	23,980
Total capital outlay, funded	11,805	36,933	29,133
Total program costs, funded	910,101	1,080,723	1,104,428
Change in selected resources [1]	73,288	13,342	15,500
Adjustment in selected resources: Inventory transferred from Department of Defense	−101	−16,586	
10 Total obligations	983,287	1,077,479	1,119,928

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Financing:			
	Receipts and reimbursements from:			
11	Federal funds:			
	Supply operations program:			
	Stores, regular items: Revenue	−520,749	−591,000	−606,500
	Stores, direct delivery items: Revenue	−71,661	−88,200	−94,000
	Nonstores items: Revenue	−216,315	−263,100	−271,000
	Export operations: Revenue	−53,465	−51,600	−53,200
	Equipment rental: Revenue	−816	−1,209	−1,173
	Rehabilitation and repair of furniture and equipment: Revenue	−920	−875	−875
	Motor pools: Revenue	−46,046	−48,699	−48,870
	Administrative equipment:			
	Revenue	−2,113	−2,954	−3,006
	Other	−111		
	Change in unfilled customers' orders	−48,862	−53,020	−15,000
13	Trust fund accounts:			
	Supply operations program:			
	Stores, regular items: Revenue	−6,771	−8,000	−8,500
	Stores, direct delivery items: Revenue	−600	−800	−1,000
	Nonstores items: Revenue	−2,703	−2,900	−3,000
	Rehabilitation and repair of furniture and equipment: Revenue	−21	−25	−25
	Motor pools: Revenue	−1,668	−1,700	−1,800
14	Non-Federal sources (5 U.S.C. 630g): Undistributed receipts: Proceeds from sale of equipment	−1,081	−5,310	−3,960
21	Unobligated balance available, start of year:			
	Available			−21,777
	Obligations in excess of availability	42,276	14,675	
24	Unobligated balance available, end of year:			
	Available		21,777	13,459
	Obligations in excess of availability	−14,675		
27	Capital transfer to general fund	8,015	5,461	300
40	New obligational authority (appropriation)	45,000		
	Relation of obligations to expenditures:			
10	Total obligations	983,287	1,077,479	1,119,928
70	Receipts and other offsets (items 11 to 17)	−973,902	−1,119,392	−1,111,909
71	Obligations affecting expenditures	9,385	−41,913	8,019
72	Obligated balance, start of year	126,070	107,441	64,539
74	Obligated balance, end of year	−107,441	−64,539	−32,969
90	Expenditures	28,014	989	39,589
	Expenditures are distributed as follows:			
01	Out of current authorizations	28,014	989	39,589
02	Out of prior authorizations			

[1] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Advances	3,207	4,671	4,000	4,000
Unpaid undelivered orders	220,180	231,910	240,000	240,000
Commodities for sale	190,935	250,890	256,900	272,400
Deferred charges, supplies	948	1,087	1,000	1,000
Total selected resources	415,270	488,558	501,900	517,400

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	GENERAL SERVICES ADMINISTRATION			
	Direct costs:			
31.0	Equipment	11,805	36,933	29,133
	Reimbursable costs:			
11.1	Permanent positions	6,541	7,115	7,748
11.3	Positions other than permanent	109	80	72
11.5	Other personnel compensation	103	120	120
	Total personnel compensation	6,753	7,315	7,940
12.0	Personnel benefits	524	594	635
21.0	Travel and transportation of persons	132	132	132
	Payment to interagency motor pools	4	4	4
22.0	Transportation of things	34,440	39,050	40,710
23.0	Rent, communications, and utilities	3,734	3,335	1,405
24.0	Printing and reproduction	20	20	20
25.1	Other services	40,659	43,673	45,157
25.2	Services of other agencies	547	1,700	1,800
26.0	Supplies and materials	14,431	15,575	16,725
	Materials supplied to other agencies	794,939	929,991	958,367
	Total reimbursable costs	896,183	1,041,390	1,072,895
	Total costs, General Services Administration	907,988	1,078,323	1,102,028
	ALLOCATION TO INTERIOR, BONNEVILLE POWER ADMINISTRATION			
25.2	Services of other agencies	2,113	2,400	2,400
	Total costs, funded	910,101	1,080,723	1,104,428
94.0	Change in selected resources	73,287	13,342	15,500
	Adjustment in selected resources	−101	−16,586	
99.0	Total obligations	983,287	1,077,479	1,119,928
	PERSONNEL SUMMARY			
	Total number of permanent positions	939	1,053	1,146
	Full-time equivalent of other positions	41	20	18
	Average number of all employees	932	985	1,041
	Average GS grade	7.3	7.2	7.2
	Average GS salary	$7,845	$8,207	$8,265
	Average salary of ungraded positions	$6,768	$6,763	$6,754

Mr. EVINS. Tell us about your general supply fund. You have $358 million in it and this will increase by $0.4 million over last year.

What is the status of the fund?

Mr. JOHNSON. Mr. Chairman, on the General Supply fund, we are not asking for any more funds.

What this shows is that this is a revolving fund for which we are not asking for any increased capital. It shows you how we provide the funds to carry on our activity and what we do with them.

Mr. EVINS. You operate the motor pool with it.

Mr. JOHNSON. That is correct. We also operate our supply system.

Mr. EVINS. Equipment rentals?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. You had $45 million appropriated last year; you do not expect to sweeten that pot every year, do you?

Mr. JOHNSON. As I stated last year, I thought the $45 million would last us through the fiscal year 1969 and we are not requesting any 1969 funds.

INTERAGENCY MOTOR POOL SALES

Mr. EVINS. Services are provided to agencies through a system of interagency motor pools. Sales are estimated to increase from $47.7 million in 1967 to $50.4 million in 1968, and $50.7 million in 1969.

Mr. JOHNSON. Yes, sir.

Mr. JONAS. Mr. Chairman, will you yield right there?

At this point in the record will you insert a small table bringing the cumulative savings up to date?

Mr. JOHNSON. We certainly will.

(The information requested follows:)

FISCAL YEAR 1967—COMPARATIVE INTERAGENCY MOTOR POOL STATISTICS

Interagency motor pools			Reported by agencies for the survey period (including additional consolidations from date of determination).				C.P.M. adjusted by BLS-CPI[1] to June 30, 1967	Actual under pool system projected for fiscal year 1967				Comparison, agencies reported against pool actual			
Region	Pool	Location	Number of vehicles required	Total miles traveled (millions)	Average miles per vehicle year	Cost per mile (cents)		Number of vehicle years	Total miles traveled (millions)	Average miles per vehicle year	Cost per mile (cents	Increased miles traveled (millions)	Average miles per vehicle year (increase)	Savings per mile (cents)	Total savings (dollars)
	1	Boston	448	3.896	8,696	0.0980	0.1172	735	8.349	11,365	0.0675	4.453	2,669	0.0497	414,945
	2	Providence	165	1.349	8,176	.1288	.1412	220	2.390	10,840	.0776	1.041	2,664	.0636	152,004
	3	Hartford-Springfield	270	2.231	8,264	.1251	.1455	236	2.795	11,868	.0660	.564	3,604	.0795	222,203
	4	Portland, Maine	183	1.823	9,964	.1204	.1349	223	2.921	13,081	.0702	1.098	3,117	.0647	188,989
	5	Burlington	132	1,212	9,183	.1190	.1296	135	1.601	11,850	.0750	.389	2,667	.0546	87,415
	1	New York City	712	4,549	6,390	.1464	.1683	1,073	10,754	10,021	.0808	6,205	3,631	.0875	940,975
	2	Philadelphia	386	3.423	8,868	.0925	.1062	700	7,918	11,304	.0701	4.495	2,436	.0361	285,840
	3	Pittsburgh	383	3.004	7,844	.1358	.1428	496	5.100	10,278	.0787	2.096	2,434	.0641	326,910
	4	Buffalo	244	2,220	9,099	.1202	.1299	303	3.261	10,773	.0761	1.041	1,674	.0538	175,441
	5	Albany	293	2,320	9,709	.1015	.1159	300	3.838	12,816	.0727	1.518	3,107	.0432	165,802
	6	Harrisburg	344	2.404	6,989	.1065	.1164	318	3.824	12,012	.0671	1.420	5,023	.0493	188,523
	7	San Juan, P.R.	299	1.994	6,667	.1198	.1257	586	4.958	8,467	.0985	2.964	1,800	.0272	134,858
	8	Syracuse	155	1.383	8,920	.0987	.1044	169	2.112	12,467	.0738	.729	3,547	.0306	64,627
	9	Trenton	187	1.627	8,703	.1408	.1532	214	2.210	10,333	.0767	.583	1,630	.0765	169,065
	10	Newark	296	2.772	9,366	.1056	.1141	409	4.157	10,163	.0816	1.385	797	.0325	135,103
3	1	Washington, D.C.	1,173	6.770	5,771	.1415	.1711	1,675	13.536	8,084	.1086	6.766	2,313	.0625	846,000
	2	Baltimore	308	2.927	9,504	.1239	.1256	492	5.880	11,959	.0791	2.953	2,455	.0465	273,420
	3	Richmond	235	2.519	10,718	.0994	.1126	293	3.518	12,003	.0745	.999	1,285	.0381	134,036
	4	Norfolk	211	1.943	9,210	.1076	.1175	260	2.882	11,074	.0863	.939	1,864	.0312	89,918
	5	Charleston, W. Va.	114	1.125	9,871	.1044	.1091	175	1.991	11,355	.0833	.866	1,484	.0258	51,368
	6	Huntington	124	1.454	11,722	.1173	.1227	154	2.027	13,203	.0909	.573	1,481	.0318	64,459
4	1	Atlanta	744	6.627	8,907	.0912	.0940	836	10.060	12,036	.0643	3.433	3,129	.0297	298,782
	2	Nashville	344	3.618	10,518	.0878	.0963	439	5.048	11,504	.0657	1.430	986	.0306	154,469
	3	Memphis	306	3.030	9,903	.0854	.1116	395	4.484	11,363	.0778	1.454	1,460	.0338	151,559
	4	Raleigh-Durham	439	4.163	9,483	.1000	.1057	516	6.408	12,418	.0617	2.245	2,935	.0440	281,952
	5	Tampa	207	1.903	9,195	.0965	.1053	326	3.286	10,085	.0760	1.383	890	.0293	96,280
	6	Miami	256	2.283	8,916	.0893	.1009	595	5.566	9,357	.0768	3.283	441	.0241	134,141
	7	Jackson-Vicksburg	454	4.508	9,930	.0872	.0932	442	6.055	13,683	.0711	1.547	3,753	.0221	133,816
	8	Mobile	310	3.329	10.740	.1001	.1055	436	5.073	11,643	.0699	1.744	903	.0356	180,599
	9	Columbia	212	2.162	10,200	.0837	.0907	301	3.121	10,359	.0675	.959	159	.0232	72,407
	10	Cape Kennedy No. 1	803	3.850	4,794	.1673	.1781	1,616	18.633	11,531	.0824	14.783	6,737	.0957	1,783,178
	11	Jacksonville	214	2.089	9,761	.0963	.1026	392	4.510	11,507	.0639	2.421	1,746	.0387	174,537

5	1	Chicago	605	5,538	9,154	.1146	.1312	893	10,417	11,664	.0647	4,879	2,510	.0665	692,731
	2	Cleveland	268	2,195	8,191	.1062	.1227	408	4,391	10,770	.0729	2,196	2,579	.0498	218,672
	3	Louisville	269	2,904	10,796	.0999	.1178	315	3,977	12,621	.0645	1,073	1,825	.0533	211,974
	4	Indianapolis	267	2,362	8,847	.0943	.1119	406	4,812	11,864	.0660	2,450	3,017	.0459	220,871
	5	Milwaukee	227	2,158	9,508	.1205	.1361	344	3,554	10,320	.0721	1,396	812	.0640	227,456
	6	Detroit	395	3,941	9,976	.0920	.1293	437	5,479	12,528	.0638	1,538	2,552	.0655	358,875
	7	Columbus	255	2,385	9,351	.0902	.1068	255	3,133	12,277	.0669	.748	2,926	.0393	125,007
	8	Cincinnati	271	2,864	10,567	.1074	.1128	319	3,765	11,788	.0629	.901	1,221	.0499	187,874
	9	Lansing	237	2,856	12,050	.0920	.1030	315	4,341	13,763	.0685	1,485	1,713	.0345	149,765
	10	Lexington	174	1,579	9,077	.1110	.1237	204	2,264	11,101	.0785	.685	2,024	.0452	102,333
6	1	Kansas City, Mo	428	4,381	10,235	.0952	.1111	939	13,883	14,792	.0605	9,502	4,557	.0506	702,480
	2	Minneapolis-St. Paul	627	6,562	10,465	.0984	.1128	730	9,531	13,057	.0654	2,969	2,592	.0474	451,769
	3	Omaha	332	3,757	11,318	.1032	.1132	406	5,194	12,779	.0637	1,437	1,461	.0495	257,103
	4	St. Louis	347	3,315	9,553	.1001	.1173	617	6,642	10,766	.0622	3,327	1,213	.0551	365,974
	5	Bismarck	475	4,954	10,430	.0881	.0127	439	6,041	13,763	.0686	1,087	3,333	.0341	205,998
	6	McCook	299	1,993	6,665	.1085	.1087	245	2,662	10,851	.0735	.669	4,186	.0352	93,702
	7	Des Moines	240	2,159	8,996	.0986	.1088	228	2,722	11,942	.0667	.563	2,946	.0421	114,596
	8	Wichita	204	2,141	10,495	.0952	.1007	187	2,109	10,772	.0685	(.122)	277	.0322	65,012
7	1	Dallas-Fort Worth	610	5,037	8,257	.0910	.1007	892	9,648	10,813	.0753	4,611	2,556	.0254	245,059
	2	New Orleans	320	3,175	9,920	.1025	.1171	433	4,956	11,454	.0698	1,781	1,534	.0473	234,419
	3	Houston-Galveston	503	4,091	8,133	.0923	.1015	792	7,635	9,644	.0785	3,544	1,511	.0230	175,605
	4	Oklahoma City	458	3,242	7,078	.0859	.1089	560	6,268	11,199	.0629	3,026	4,121	.0460	288,328
	5	Little Rock	217	2,686	12,377	.0988	.1265	339	4,341	12,823	.0656	1,655	446	.0609	264,367
	6	San Antonio	344	3,149	9,154	.0880	.1146	357	3,451	9,659	.0725	.302	505	.0421	145,287
	7	Baton Rouge	261	2,363	9,055	.0966	.1012	297	3,439	11,587	.0673	1,076	2,532	.0339	116,582
	8	Lubbock-Amarillo	276	2,549	9,236	.0701	.0800	288	3,720	12,916	.0658	1,171	3,680	.0142	52,824
	9	Austin	241	2,964	12,297	.0946	.0964	268	2,569	9,586	.0716	(.395)	(2,711)	.0248	63,711
	10	El Paso	249	2,771	11,129	.0983	.1016	214	2,753	12,877	.0769	(.18)	1,748	.0247	67,999
	11	Tulsa	412	4,482	10,878	.0977	.1089	243	3,034	12,493	.0719	(1,448)	1,615	.0370	112,258
8	1	Denver	955	9,147	9,578	.0844	.1202	1,300	16,991	13,074	.0854	7,844	3,496	.0348	591,287
	2	Albuquerque	477	5,418	11,359	.0834	.1041	679	9,167	13,497	.0726	3,749	2,138	.0315	288,761
	3	Salt Lake City	293	2,845	9,711	.0764	.0947	699	7,338	10,492	.0869	4,493	781	.0078	57,236
	4	Ogden	292	2,216	7,589	.0848	.1142	423	4,748	11,221	.0876	2,532	3,632	.0266	126,297
	5	Santa Fe	128	1,411	11,022	.0873	.1053	301	4,034	13,414	.0739	2,623	2,392	.0314	126,668
	6	Grand Junction	417	3,405	8,165	.1139	.1281	323	3,604	11,144	.0998	.199	2,979	.0283	101,993
	7	Casper	311	3,069	9,868	.1062	.1187	409	5,288	12,932	.0910	2,219	3,064	.0277	146,478
	8	Phoenix	385	4,637	12,043	.0834	.1133	661	8,639	13,066	.0848	4,002	1,023	.0285	246,213
	9	Tucson	326	3,269	10,027	.0895	.0958	340	4,216	12,384	.0851	.947	2,357	.0107	45,111
	10	Farmington	338	2,761	8,170	.1179	.1248	336	3,859	11,485	.0862	1,098	3,315	.0386	148,957
	11	Gallup	619	5,994	9,683	.0974	.1033	754	9,587	12,718	.0876	3,593	3,035	.0157	150,516
	12	Holbrook	483	4,418	9,147	.1017	.1101	539	6,632	12,294	.0983	2,214	3,147	.0118	78,258
	13	Parker	202	1,730	8,564	.1056	.1157	234	2,880	12,303	.0959	1,150	3,739	.0198	57,024
	14	Boulder, Colo	200	1,431	7,158	.1144	.1222	233	1,773	7,598	.0898	.342	440	.0324	57,445
	15	Las Cruces, N. Mex	420	3,977	9,468	.1173	.1253	405	4,618	11,399	.0775	.641	1,931	.0478	220,740
	16	Vernal, Utah	141	.885	6,275	.1103	.1160	112	1,256	11,197	.0996	.371	4,922	.0164	20,598

FISCAL YEAR 1967—COMPARATIVE INTERAGENCY MOTOR POOL STATISTICS—Continued

Interagency motor pools			Reported by agencies for the survey period (including additional consolidations from date of determination).				C.P.M. adjusted by BLS-CPI [1] to June 30, 1967	Actual under pool system projected for fiscal year 1967				Comparison, agencies reported against pool actual			
Region	Pool	Location	Number of vehicles required	Total miles traveled (millions)	Average miles per vehicle year	Cost per mile (cents)		Number of vehicle years	Total miles traveled (millions)	Average miles per vehicle year	Cost per mile (cents	Increased miles traveled (millions)	Average miles per vehicle year (increase)	Savings per mile (cents)	Total savings (dollars)
9	1	San Francisco	307	2.830	9,220	.1104	.1570	699	8.509	12,169	.0745	5.679	2,949	.0825	701,993
	2	Los Angeles	1,027	8.896	8,662	.1054	.1185	1,305	14.282	10,948	.0680	5.386	2,286	.0505	721,241
	3	Las Vegas	335	3.063	9,143	.1226	.1314	370	4.576	12,381	.0904	1.513	3,238	.0410	187,616
	4	Redding	482	4.456	9,246	.1009	.1099	327	3.559	10,872	.0850	(.897)	1,626	.0249	88,619
	5	San Diego	312	2.752	8,821	.1181	.1297	439	4.834	11,006	.0791	2.082	2,185	.0506	244,600
	6	Oakland	336	2.876	8,557	.0889	.1188	468	5.508	11,780	.0795	2.633	2,223	.0393	216,464
	7	Sacramento	319	3.889	12,192	.0683	.0902	517	6.746	13,058	.0742	2.857	866	.0160	107,936
	8	Reno	340	3.244	9,542	.0986	.1130	450	5.611	12,462	.0947	2.367	2,920	.0183	102,681
	9	Honolulu	267	1.683	6,304	.1343	.1412	360	2.884	8,004	.0929	1.201	1,700	.0483	139,297
	10	Redwood City	288	2.670	9,272	.1138	.1239	340	3.258	9,573	.0908	.588	301	.0331	107,840
	11	Fresno	359	3.082	8,584	.1052	.1110	262	2.803	10,686	.0934	(.279)	2,102	.0176	49,333
10	1	Seattle	855	7.451	8,714	.1159	.1359	994	11.456	11,520	.0824	4.005	2,806	.0535	612,896
	2	Portland-Vancouver	1,499	13.265	8,849	.1048	.1271	1,933	22.984	11,892	.0911	9.719	3,043	.0360	827,424
	3	Spokane	462	4.178	9,043	.1222	.1530	575	6.482	11,268	.0882	2.304	2,225	.0648	420,034
	4	Billings	534	4.317	8,083	.1028	.1232	580	6.475	11,169	.0884	2.158	3,086	.0348	225,330
	5	Boise	380	4.032	10,610	.1117	.1278	625	6.996	11,197	.0914	2.964	588	.0364	254,654
	6	Anchorage	368	1.642	4,463	.2666	.3038	335	2.187	6,523	.1784	.545	2,060	.1254	274,250
	7	Helena-Great Falls	506	4.442	8,779	.1132	.1240	793	9.654	12,178	.0816	5.212	3,399	.0424	409,330
	8	Medford	402	3.983	9,908	.0972	.1012	362	4.226	11,676	.1008	.243	1,768	.0004	1,690
	9	Fairbanks	240	.841	3,503	.3197	.3501	185	1.108	5,976	.2024	.267	2,473	.1477	163,652
		Total, 97 pools	36,313	325.264	8,957	.1046	.1217	47,497	543.675	11,447	.0786	218.411	2,490	.0431	23,412,714

[1] Bureau of Labor Statistics, Consumer Price Index.

Note.—Attention is invited to the fact that agencies requirements for vehicle services from the pool have increased 67.1 percent over prior-to-pool requirements. By increasing utilization 27.8 percent the motor pool system was able to furnish this increased mileage with 13,201 less vehicles than would have been required by the agencies to travel the same miles prior to pooling.

NUMBER OF VEHICLES AND POOLS

Mr. EVINS. How many vehicles are in the pool and how many pools are operated?

Mr. JOHNSON. Ninety-seven motor pools.

Mr. EVINS. How many vehicles are there?

Mr. JOHNSON. 48,533 vehicles in operation at the end of 1967.

MOTOR VEHICLE REPLACEMENT STANDARDS

Mr. EVINS. At what time do you trade in these vehicles?

Mr. JOHNSON. We have a Government-wide standard, Mr. Chairman, of 6 years or 60,000 miles, presently for sedans and station wagons.

We have been carrying on some studies with the Bureau of the Budget as to whether this is the right replacement standard from an economical standpoint; but right now the rule is 6 years or 60,000 miles.

Mr. BOLAND. I see where the city of New York does not keep them that long. They get a much better trade.

Mr. JOHNSON. That is correct.

Mayor Lindsay has said he was going to a 2-year trade-in and was going from black to colored cars, to increase resale value.

We have studies to show that if we traded our cars at the first year we would operate them at very little cost, provided the manufacturers would still sell them to us at the price they now do.

Mr. BOLAND. You do not think they would?

Mr. JOHNSON. It is debatable.

Mr. BOLAND. They would not want 28,000 cars dumped on the market, I suppose.

Mr. JOHNSON. That is the argument against it.

Now, we have studied this at successive periods of time—2 years and 24,000; 3 years and 36,000; and 4 years and 48,000, right up to 6 years and 60,000 miles.

We have presented a study to the Bureau. They considered it and asked for some more data, which we are now trying to develop for them.

This is a Government-wide replacement standard applicable to us and the balance of the Government also.

VEHICLE PROCUREMENT AND REPLACEMENT

Mr. EVINS. How many cars are exchanged a year, on the average?

Mr. JOHNSON. In 1968, 14,750 vehicles of all types are planned for procurement.

Mr. EVINS. That is a pretty good order. Do all the major motor companies bid on these 14,750 cars?

Mr. ABERSFELLER. No, sir. But it would appear at the moment the limitation may be a problem.

As you know, we have a $1,500 limitation on sedans. On the last volume procurement we only had one bidder and that was American Motors.

Mr. EVINS. You set a price that you will pay for your vehicles, and they think the limitation is so low that they won't bid?

Mr. KNOTT. That is set by statute.

Mr. JONAS. Actually, they do not fight for this business. They do not make any money on it.

Mr. ABERSFELLER. It serves their purpose when they are in low periods of production.

SALE OF VEHICLES

Mr. JONAS. How do you get these trades? Do you deal with a local dealer and then the company makes up the difference to him?

Mr. ABERSFELLER. Oh, no, sir; we actually put the cars on sale.

Mr. KNOTT. Auction sales.

Mr. ABERSFELLER. The Property Management and Disposal Service of GSA does the selling.

VEHICLE PROCUREMENT

Mr. EVINS. We know how you sell them, but how do you buy them?

Mr. ABERSFELLER. On a competitive basis.

Mr. EVINS. But you said they are not bidding.

Mr. ABERSFELLER. The last ones were bought from the sole bidder and we paid $1,500.

Mr. EVINS. Do you buy them from the manufacturer?

Mr. ABERSFELLER. Directly from the manufacturer. Actually at $1,500 we are still getting them for around $400 less than the dealer's price.

Mr. EVINS. The 14,750 a year is a relatively large volume.

Mr. JOHNSON. The 14,750 was all types of vehicles: Sedans, station wagons, ambulances and trucks; all types of trucks.

Mr. ABERSFELLER. The limitation still only deals with sedans, and this year we will buy about 5,000 sedans.

GSA's own motor vehicle fleet is only part of our procurement, but actually we buy more trucks, Mr. Chairman, than anything else.

There is no limitation on trucks and we are getting very attractive prices.

Mr. JOHNSON. Of the 14,750, 7,600 of them are trucks of less than 1-ton capacity.

In addition 5,570 in sedans, 780 station wagons, 40 ambulances, 110 buses, and 650 trucks over 1-ton capacity.

Mr. EVINS. Who are you buying the buses for?

Mr. JOHNSON. We operate the buses in the motor pool. We actually rent them out to agencies for agency use.

Mr. ABERSFELLER. We buy buses for other people, also.

We buy for the Atomic Energy Commission contractors in transporting workers from communities to remote sites.

SAFETY STANDARDS

Mr. EVINS. We read a report that certain of the manufacturers were not bidding because of your safety requiremets. You have built-in safety requirements in your specifications that your manufacturers do not adhere to.

Mr. ABERSFELLER. I think that report was in error. It was an outgrowth of my testimony, before Senator Ribicoff in recent hearings.

What he had proposed was a bill which would have the Government

require that all the manufacturers state in their bids the cost of all the safety items on their vehicles.

We said at that time that we opposed the bill because we felt that if the industry was faced with that choice, they would rather not bid; so they would not have to reveal their cost.

We rescinded our standards, effective the first of January, Mr. Chairman, when the DOT standards became effective for sedans and station wagons.

We have retained standards for trucks which DOT has not picked up yet.

As soon as they pick them up, we will rescind ours.

We have gotten out of the safety standard work, except for trucks, in those areas where DOT hasn't covered it as yet.

PROCUREMENT OF FOREIGN CARS

Mr. EVINS. Are you purchasing any foreign cars?

Mr. JOHNSON. No, sir.

Mr. JONAS. Mr. Chairman, I would like to invite attention to another GSA report in which they claim you could save substantial funds on preventive maintenance by adopting the manufacturer's programs.

You responded by saying that you have been working with the manufacturers to revise the current guide.

Mr. JOHNSON. Mr. Jonas, let us get another witness. That would be Mr. Douglas E. Williams.

Mr. JONAS. You can do it later.

SALE OF VEHICLES

Mr. WYMAN. Mr. Chairman, you said you understood how they sold these cars; but I do not. Who buys them?

Mr. KNOTT. Individuals buy them.

Mr. JONAS. Used car dealers?

Mr. WYMAN. Has this already been covered?

Mr. KNOTT. It has not been covered in any great detail. We have personal property sales centers around the country, and cars and other surplus items are offered.

Mr. WYMAN. If you buy a car at a ceiling under the statute at $1,500 and you turn it over after 3 years. do the depreciation on the car and the price at which you put it up for sale compare with your original price in terms of a "buy"?

Mr. KNOTT. This was the point that Mr. Boland raised, and he pointed out that Mayor Lindsay had just announced a program of selling every 2 years.

Now, we have not gotten down to that. Actually, we have made some studies along that line and propose to do some more. But actually our governmentwide standard now is 6 years or 60,000 miles, whichever is first, you see.

I have an idea that if we were down to about 2 years we might very well do the very thing you are suggesting. We might come out with a sale at something like what we had to pay originally.

Mr. WYMAN. I was not thinking of that alone.

VEHICLE RECOVERY COST

Mr. JOHNSON. Our average sale price is less than $500 per vehicle.

Mr. KNOTT. And it varies according to various places in the country. Now, for example, for some reason I do not understand, Denver, Colo., and Auburn, Wash., have always been good places for sales. On sales in Denver and Auburn we recover about one-fourth.

Other places, the recovery is not so good; it depends on the market conditions wherever the sales may be held.

Mr. Jonas, the other oddity is the recovery we have here in the District. They are generally purchased by used car dealers at the auction and then transported down South.

Mr. WYMAN. Are these sales in bulk or to individuals?

Mr. JOHNSON. Most of it is to individuals or used car dealers.

Mr. ABERSFELLER. All the cars are sold individually.

SALE OF TYPEWRITERS

Mr. TALCOTT. To whom do you sell the typewriters?

Mr. ABERSFELLER. To individuals or dealers, and on occasion agencies may trade them in.

There is an exchange sale regulation which provides that agencies can trade in typewriters so long as they buy new typewriters with the proceeds of the sale. Our contracts with original equipment manufacturers allow for a trade-in price and the agency makes a judgment.

Mr. TALCOTT. No Federal employees can buy?

Mr. ABERSFELLER. No, sir; not GSA employees.

MANUFACTURER'S RECOMMENDATIONS ON VEHICLE MAINTENANCE

Mr. JONAS. I just wanted to ask Mr. Williams, or Mr. Conrad, what do you have to say about this report of GSA that saves $350,000 if you adopted the manufacturer's recommendation about maintenance of automobiles?

Mr. WILLIAMS. We have adopted their recommendations.

Mr. JONAS. Only as to 1966. They are talking about 1963 through 1965.

They say they estimate that, if the manufacturer's recommended program for 1963 through 1965 models are adopted promptly, savings of about $350,000 can still be realized on these vehicles while they remain in inventory.

Mr. WILLIAMS. We replied to the report, and I have forgotten exactly what it was.

REVISED MAINTENANCE GUIDE

Mr. JONAS. You replied that, in a letter dated August 30, 1966, the Deputy Administrator advised that they had been working with the manufacturers on a revised guide.

The guide was issued in April 1967. However, it retains intervals for some maintenance and thus provides for overmaintenance on some vehicles and undermaintenance on others.

They say, while it is applicable only to 1966, they recommend it be installed or used for the vehicles in inventory that were bought in 1963 through 1965.

Mr. CONRAD. Those standards have their applicability to vehicles receiving normal use.

Those suppliers from which we obtain our vehicles do not agree that our vehicles receive normal use.

We have adjusted our preventive maintenance guide and, in addition, there is in circulation, to the agencies right now for their comment, the second recommendation of the report, which is that we encourage other agencies to adopt preventive maintenance guidelines for their fleets.

Mr. JONAS. I do not understand that is what he is talking about.

He says that you have revised the guide, but the revisions only are applicable to the 1966 models, and he is recommending here that you put that same revised guide in effect for the remaining cars that are in inventory that were purchased prior to 1966. That is what he says, anyway. I am not an expert in this field.

Do you understand what he is talking about?

Mr. CONRAD. Yes, we have made the revisions applicable to the entire fleet.

Mr. EVINS. Well, your guides and standards are not retroactive.

Mr. CONRAD. Yes, sir, they are not ordinarily retroactive but in addition to that the car manufacturers are in complete accord with the maintenance standards which we have prescribed and we have reconciled this matter with GAO.

COORDINATION OF RESEARCH ON DETERGENTS

Mr. MARSH. Mr. Chairman, before we leave this subject of testing and standards, what coordination do you maintain with the Office of Water Research and the Bureau of Sports Fisheries on research on detergents, hard and soft?

Mr. ABERSFELLER. We are maintaining liaison with them, and the HEW, as far as water and air pollution are concerned.

Mr. MARSH. Is your testing there on the ability of the detergent to perform its job as a cleaner, or do you get into the pollution phase?

Mr. ABERSFELLER. We have to consider pollution as well.

Interestingly enough, in California there is a rule 66 which restricts the ingredients of paint, and we are having a very hard time getting a paint specification which will comply with that rule.

Air pollution in this particular case; but in the particular case of detergents, we are as concerned about water pollution, as we are about cleansing.

Mr. MARSH. You maintain coordination with the other agencies?

Mr. ABERSFELLER. Yes, indeed.

SMALL BUSINESS LIAISON

Mr. MARSH. In reference to this section and in line with some of the chairman's questions about small business, do you maintain a small business liaison, or is there an individual, with whom a small business man can communicate in your agency if he wants to do business with one of the divisions of your agency?

Would you put that in the record at this point, Mr. Knott, the information for someone who wants to do business with GSA?

Mr. GRIFFIN. Do you want us to speak to it, generally?

Mr. MARSH. If you will insert the name and address and phone numbers.

Mr. KNOTT. Oh, yes.

Mr. GRIFFIN. We maintain business service centers in 11 cities throughout the country. All of these are equipped with specialists, business affairs specialists whose principal function is aiding small business; but also assist all other size businesses in their efforts to introduce new products or to contract with the Government.

In addition, we have trained over 100 GSA area representatives, who are primarily building specialists in 100 cities of the country. These officials are trained regularly and in depth to offer some type of service and maintain contact with their regional offices as well.

We have one large center here in Washington and others in our regional cities.

BUSINESS SERVICE CENTER DIRECTORY

For the record, we will supply the names and addresses of all these but will limit the listing to the principal business service centers which service the main metropolitan area.

(The information requested follows:)

BUSINESS SERVICE CENTER DIRECTORY, NOVEMBER 1967

Address and telephone number	Service area
Frank J. O'Connor, Regional Director of Business Affairs, General Services Administration, John Fitzgerald Kennedy Federal Building, Boston, Mass. 02203. Telephone: 617–223–2868.	*Region 1* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
John F. Clark, Regional Director of Business Affairs, General Services Administration, 30 Church Street, New York, N.Y. 10007. Telephone: 212–264–1234.	*Region 2* Delaware, New Jersey, New York, Pennsylvania, Puerto Rico, and Virgin Islands
William F. Donlin, Jr., Regional Director of Business Affairs, General Services Administration, Seventh and D Streets SW., Washington, D.C. 20407. Telephone: 202–963–4147.	*Region 3* District of Columbia, Maryland, Virginia, and West Virginia
William W. Barron, Regional Director of Business Affairs, General Services Administration, 1776 Peachtree Street NW., Atlanta, Ga. 30309. Telephone: 404–526–5661.	*Region 4* Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee
Joel L. Leckness, Regional Director of Business Affairs, General Services Administration, 219 South Dearborn Street, Chicago, Ill. 60604. Telephone: 312–353–5383.	*Region 5* Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin
Francis M. Bukaty, Regional Director of Business Affairs, General Services Administration, 1500 East Bannister Road, Kansas City, Mo. 64131. Telephone: 816–361–7203.	*Region 6* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota
Robert T. Davis, Regional Director of Business Affairs, General Services Administration, 819 Taylor Street, Fort Worth, Tex. 76102. Telephone: 817–334–3284.	*Region 7* Arkansas, Louisiana, Oklahoma, and Texas
Price J. George, Regional Director of Business Affairs, General Services Administration, Denver Federal Center, Building 41, Denver, Colo. 80225. Telephone: 303–233–6689.	*Region 8* Arizona, Colorado, New Mexico, Utah, and Wyoming
Robert J. Ireland, Regional Director of Business Affairs, General Services Administration, 49 Fourth Street, San Francisco, Calif. 94103. Telephone: 415–556–2114.	*Region 9* California, Hawaii, and Nevada
Mrs. Margaret Bayless, Manager, Business Service Center, General Services Administration, 300 North Los Angeles Street, Los Angeles, Calif. 90012. Telephone: 213–688–3210.	*Region 9* Los Angeles and Southern California
John J. Murphy, Regional Director of Business Affairs, General Services Administration, 909 First Avenue, Seattle, Wash. 98104. Telephone: 206–583–5558.	*Region 10* Alaska, Idaho, Montana, Oregon, and Washington

GENERAL SUPPLY FUND

Mr. EVINS. Well, you have $358 million in the supply fund, and I am interested in this observation that an all-time high was reached

in 1967, with sales of $526.8 million, and you expect to reach another all-time high in 1968 of $599 million; and then in 1969, $615 million. That is a record high in the general supply fund, stocks of common-use commodities.

Your operations are increasing every year.

With this $615 million worth of business you do not need any money for this, then, next year?

Mr. JOHNSON. No, sir.

OPERATING EXPENSES, NATIONAL ARCHIVES AND RECORDS SERVICE

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimated	1969 estimated
Program by activities:			
1. Records management and centers	11,222	11,874	12,383
2. Archives and related services	4,794	4,661	4,864
3. Service direction	645	654	676
4. Administrative operations	740	782	807
Total program costs, funded [1]	17,402	17,971	18,728
Change in selected resources [2]	−133		
10 Total obligations	17,269	17,971	18,728
Financing:			
25 Unobligated balance lapsing	67		
New obligational authority	17,336	17,971	18,728
New obligational authority:			
40 Appropriation	17,121	17,580	18,728
42 Transferred from other accounts	215	74	
43 Appropriation (adjusted)	17,336	17,654	18,728
44 Proposed supplemental for civilian pay act increases		317	
Relation of obligations to expenditures:			
71 Total obligations (affecting expenditures)	17,269	17,971	18,728
72 Obligated balance, start of year	1,450	655	521
74 Obligated balance, end of year	−655	−521	−337
77 Adjustments in expired accounts	9		
90 Expenditures excluding pay increase supplemental	18,075	17,800	18,900
91 Expenditures from civilian pay act supplemental		305	12
Expenditures are distributed as follows:			
01 Out of current authorizations	16,643	17,458	18,385
02 Out of prior authorizations	1,432	647	527

[1] Includes capital outlay as follows: June 30, 1967, $49,000; 1968, $20,000; 1969, $20,000 Excludes prior-year adjustments of $61,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $343,000 (1967 adjustments—$54,000) 1967, $156,000; 1968, $156,000; 1969, $156,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	12,547	13,145	13,582
11.3	Positions other than permanent	343	167	134
11.5	Other personnel compensation	60	108	108
	Total personnel compensation	12,950	13,420	13,824
12.0	Personnel benefits	1,006	1,027	1,033
13.0	Benefits for former personnel	4		
21.0	Travel and transportation of persons	72	77	89
	Payment to interagency motor pools	23	25	25
22.0	Transportation of things	99	170	85
23.0	Rent, communications, and utilities	703	708	746
24.0	Printing and reproduction	52	61	85
25.1	Other services	1,785	1,971	2,316
25.2	Services of other agencies	115	100	80
26.0	Supplies and materials	412	393	425
32.0	Lands and structures	49	20	20
99.0	Total obligations	17,269	17,971	18,728

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	1,783	1,773	1,850
Full-time equivalent of other positions	50	41	35
Average number of all employees	1,776	1,746	1,815
Average GS grade	6.3	6.3	6.3
Average GS salary	$7,350	$7,822	$7,831
Average salary of ungraded positions	$5,946	$6,155	$6,155

Mr. EVINS. Mr. Chairman, I think we ought to take a look at the National Archives and Records Service, and this will be all that we will consider today.

We will complete our examination of your budget tomorrow.

The National Archives and Records Service has a historical interest and is a very important agency of the Government. You promote improved records management and disposal practices in Federal agencies. You operate 14 Federal records centers, and select, preserve, and service the permanently valuable historical records of the Federal Government. You also publish the slip laws, the U.S. Statutes at Large, constitutional amendments, Presidential documents, and administrative regulations having general applicability and legal effect, you preserve, publish, and administer the historical materials in Presidential libraries operated by GSA and you administer the National Historical Publications Commission grant program.

The Archivist chairs the National Historical Publications Commission, the Administrative Committee of the Federal Register, and provides leadership to the Federal Records Council.

He also chairs the National Archives Trust Fund Board, which receives and administers donations for the benefit of the National Archives, and through the National Archives trust fund, furnishes for a fee, copies of records in the custody of the National Archives and Records Service.

We admire the doctor, and he has a lot of duties.

Doctor, tell us about some of your accomplishments and goals.

GENERAL STATEMENT

Dr. BAHMER. Mr. Chairman, we come to you with a very tight budget this year, but we feel that in the past several years we have more than proved the worth of our organization in workload and production.

For instance, since 1961, the holdings in our records centers have gone up from 6.7 million cubic feet to almost 9 million cubic feet.

INCREASE IN REFERENCE SERVICES

References have increased from 4.8 million to 5.6 million; during this same period we have had transfers of functions from the Army and the GAO, and despite this increased workload and the taking over of 134 positions from these two agencies that I mentioned——

Mr. EVINS. Excuse me, but what are the two agencies?

Dr. BAHMER. The GAO and the Department of Army. We have had a reduction in staff.

Mr. EVINS. I thought it was Internal Revenue Service.

Dr. BAHMER. That is what we are taking over next year.

I am speaking now of 1961 to 1967.

REDUCTION IN OVERALL EMPLOYMENT

During that period with increased workload and transfer of functions, we have had a reduction in our overall employment from 1,832 in 1961 to 1,776 in 1967; and during the current year we are going to have another decrease of 30, down to 1,746.

I mention those facts as some evidence that the job that we are doing is being done efficiently and I think effectively.

NARS OBJECTIVES

We have, as you suggested, a number of objectives in our program, one of which is to serve the educational and cultural sector of our society, particularly the students and the scholars who are interested in the historical background of our governmental institutions and programs and the American way of life, and I think we are performing our job in this area effectively.

We also have another objective, and that is to give to the Government, to the best of our ability, an efficient and economical records management system for transitory Government records, in addition to the program for those that have sufficient historical value to justify preservation in the National Archives.

RECORD CENTER OPERATIONS

It is in this area that we get into the record centers operation which is by far the largest in terms of records on hand and business to be done.

You mentioned the 14 records centers that we operate in each of the GSA regions.

Every time a cubic foot of records is transferred from an agency to one of our records centers, the Government saves money.

We can store records, manage them efficiently and effectively, and ultimately dispose of most of them; and do it, I think, as economically as it can be done.

Mr. EVINS. Percentagewise, of the Government records, how much does the Archivist administer or control?

Dr. BAHMER. Of the total accumulation the Government has on hand, we have about 42 percent, close to 9 million cubic feet.

These are in GSA custody at the present time.

If you add to that the volume of records that GSA does not have but are in record center type space, of originating agencies, it gets close to 48 percent.

AUTHORITY FOR RECORDS DISPOSAL

Mr. EVINS. Tell us again what is the authority for disposal of records, and how is this process made?

Dr. BAHMER. The decision on disposal is generally a joint decision with the agencies involved. Some of them are rather difficult and some of them are rather easy.

Let me take an example of an easy one, that does not take a Ph. D. to make the decision.

Bills of lading accumulate by the millions in the Government, and everyone can see right off that they are not of permanent historical value. They do have to be kept for a certain time, because of the financial liabilities in connection with these instruments.

We store them after the agency has finished processing them.

We will store them for the limited life that they have, and, at the end of their life, get rid of them.

We take in about 850,000 cubic feet of records a year and get rid of about 600,000 cubic feet a year. There are some records that are very easy to identify as permanent records, for example, the statutes passed by Congress and the treaties signed by the State Department. It is when you get to the middle area, away from the clear-cut cases, that you have more difficulty.

DISPOSAL OF GOVERNMENT RECORDS

Mr. EVINS. What does the statute provide as to how a decision is made on the disposal of Government records?

Dr. BAHMER. The decision for or against retention is a responsibility of the Archivist of the United States by delegation from the Administrator.

Mr. EVINS. When an agency sends something over to you they don't send it over to you to dispose of, do they?

Dr. BAHMER. They make a recommendation under the act regulating the disposition of papers—the Disposal Act of 1943.

Agencies do make a recommendation to us that particular records shall be disposed of, and we either approve or disapprove. If we think the records have permanent value, we disapprove the recommendation. If we agree with them, we send that recommendation to the Joint Committee on the Disposition of Executive Papers here in the Congress. The actual authority for the disposal of the records comes from the Congress of the United States.

Mr. EVINS. I have tried to arrive at the process. The agency disposes of some of them. Others, they send over to the Archivist. He, in turn, may make a determination or judgment, or in other cases he notifies the Joint Committee on Disposition of Executive Papers.

Dr. BAHMER. I would say this: Most of the records that the Government produces are disposed of by the agencies without their ever coming to the General Services Administration.

The Federal Government, in all of its parts, produces 4 to 4½ million cubic feet of records per year, which is a terrific volume of records. They probably get rid of, not the records produced that year, but a volume probably something over 4 million cubic feet that are actually sold as wastepaper or disposed of by other means. This is done through the process of our approving recommendations, sending them to the Congress, and the Congress granting continuing authorizations.

DISPOSAL OF WASTEPAPER

Mr. EVINS. As an elementary proposition, a lot of people save old newspapers, which they bind and sell.

Does the Government sell its surplus papers?

Dr. BAHMER. Yes, indeed. That is handled by our Property Management and Disposal Service.

Mr. JOHNSON. We would be glad to furnish that for the record.

Mr. EVINS. Furnish it for the record, then, the volume and the amount.

(The information follows:)

Disposal of wastepaper

Volume disposed of, fiscal year 1967 (short tons)	29,594
Proceeds from disposal, fiscal year 1967	$254,458

GOVERNMENT COMMUNICATIONS

Mr. JONAS. Mr. Chairman, I remember in all the communications I get from Government officials they send me a copy attached to the original letter. Is it a Government-wide practice whenever a letter is written to include a copy?

Mr. KNOTT. Yes, sir.

Mr. JONAS. That is a considerable waste, because everybody has a copying machine now.

Dr. BAHMER. That has been a tradition.

Mr. KNOTT. It has always been with the idea that, by and large, you are going to send it along.

Mr. JONAS. But, if everybody, Government wide, is doing that, that must consume an awful lot of copy paper and half of those copies are not needed, not one out of—a small fraction.

You used to teach people how to write letters; do you still do that?

Dr. BAHMER. We still encourage a limit on the number of copies, and about 10 years ago we ran an informal poll of the Members of Congress as to whether they would object if this so-called courtesy carbon copy were eliminated from the replies to letters, and the overwhelming sentiment at that time was not to eliminate it.

In other words, we abided by the feeling of the Members of the Congress.

Mr. TALCOTT. That was before we had Xerox.

Mr. BOLAND. It would be more expensive for the Members to copy it themselves.

Mr. TALCOTT. What is 4.2 million cubic feet of documents compared to some actual building about which we know? Would it fill the Longworth House Office Building?

Dr. BAHMER. A four-drawer filing cabinet will hold about 6 cubic feet; or 7 if it is so full you can hardly get into the file.

If the volume is 4.2 million, then divided by 7, you would get 600,000 cabinets.

MICROFILMING OF RECORDS

Mr. EVINS. Who makes the decision on which paper shall be microfilmed and how extensively are you going into microfilming to save space?

Tell us about your operation in this area.

What is the prospect for the future?

Dr. BAHMER. There are several questions there, Mr. Chairman.

Let me take the one first as to the decision on microfilming.

Again, it is something of a joint decision, an agency may wish to microfilm certain of its records because they can see certain of its advantages. If these are permanent records, they cannot throw them away without getting our approval, which means approval of the microfilming project.

In a sense, we sit in a key position in this area for permanent records, of course, for records in our custody we make that judgment. We are doing practically no microfilming of records for space saving, for getting rid of the original records.

Mr. EVINS. I thought that was one of the principal purposes, to save space. Now you tell us it is not.

What is the principal purpose?

Dr. BAHMER. One of the principal purposes now is preservation.

Many of the most important records that we have in our custody, the old records of, say, the Revolutionary War period, are used constantly, and if we were to permit everybody to use the originals of those records, they would be worn out. They get dog-eared and torn.

It is simply the wear and tear of constant use; so we microfilm a great many records.

We have 16 to 17 cameras microfilming, running every day, making 5 to 6 million images, that is pictures of records, every year.

The principal purpose that I have outlined here is, first, the preservation. We ask the customers to use the microfilm in lieu of the original records.

Take the case of the records of the State Department—records of World War I, a period when paper was in short supply and they used the poorest kind of paper. Those particular files, for a period of about 4 years, were rapidly going to pieces. We had to film them and make the customers use the film in order to protect the records.

Mr. EVINS. Well, you make that decision after the records are transferred to you.

Dr. BAHMER. After they are transferred to us.

There is a second and perhaps, in a sense, equally important objective in microfilming. That is, once you have made your negative microfilm, you can made additional copies, positives we call them, from the negative rather cheaply, and this is a means of making is possible for us to distribute the large holdings that we have of important, valuable material relating to American history throughout the country.

We sell the rolls of those film at roughly our cost of making them.

This means that universities like the University of Denver, the University of South Dakota, the University of Washington, can

purchase copies of these materials and have them at hand for the use of their students and professors.

GRANTS RECEIVED AND ADMINISTERED

Mr. EVINS. You receive and administer donations for the Archives. How extensive are these donations?

Dr. BAHMER. We have one grant, for instance, that I am sure you have heard of, Mr. Chairman, and that is the $2 million that the Ford Foundation gave us in support of the program of the National Historical Publications Commission, a program to make possible support of the projects for the publication of the papers of Jefferson, Adams, Hamilton, Franklin, and Madison.

That is the largest single grant.

Mr. EVINS. Are these sporadic?

Dr. BAHMER. This is very irregular.

Mr. TALCOTT. How do you keep from getting a white elephant?

Dr. BAHMER. Well, normally, you don't get a gift without making an application for it.

In other words, you have a project that you feel is justifiable, one that you feel is appropriate for seeking non-Government support and then you go after it.

Mr. TALCOTT. You do not accept anything and everything offered to you?

Dr. BAHMER. We do not get very many offers of gifts, unsolicited.

ANALYSIS BY ACTIVITIES

Mr. EVINS. Doctor, you are asking for $12,382,600 for records management; $4,863,500 for Archives and related services. You have service direction of $675,600; and administrative operations of $806,600, for a total of $18,728,300.

NARS EMPLOYMENT

Now you show on this table, page II–48, the central office and the field. The records management's largest percentage is in the field. The average employment goes up in 1969.

Dr. BAHMER. The records centers are in the field.

Mr. EVINS. Service direction is also largely in the field.

Dr. BAHMER. That is correct, sir.

JUSTIFICATION SUMMARY

Mr. EVINS. Place pages II–48, II–49, II–50, and II–51 in the record.

(The pages follow:)

SUMMARY OF NEW OBLIGATIONAL AUTHORITY AND RELATED AVERAGE EMPLOYM

	New obligational authority		Total		Central office		Field	
	1968	1969	1968	1969	1968	1969	1968	1969
Operating expenses, NARS:								
1. Records management and centers	$11,874,400	$12,382,600	1,259.0	1,316.0	250.0	257.0	1,009.0	1,059.0
2. Archives and related services	4,660,500	4,863,500	457.5	469.5	410.5	417.5	47.0	52.0
3. Service direction	653,600	675,600	29.0	29.0	11.0	11.0	18.0	18.0
4. Administrative operations	781,800	806,600						
Total NOA and employment funded by NOA	17,970,300	18,728,300	1,745.5	1,814.5	671.5	685.5	1,074.0	1,129.0

OPERATING EXPENSES, NATIONAL ARCHIVES AND RECORDS SERVICE

Summary reconciliation of 1969 estimate to comparable amount for 1968

1968 appropriation in annual act	$17,580,000
Proposed supplemental for pay act increases	316,800
Transfer from Department of the Army	73,500
Subtotal	390,000
Comparative total for 1968	17,970,300
Increase in 1969:	
Net additional cost of 1967 Pay Act	196,200
Increased workload in regional records centers	348,400
Increased workload in the National Archives	108,400
Shelving erection for regional records centers	40,000
Increased staff for Presidential libraries	40,000
Other increases	25,000
Subtotal	758,000
1969 estimate	18,728,300

ANALYSIS BY ACTIVITIES

Activities	1968	Increase	1969
1. Records management and centers	$11,874,400	$508,200	$12,382,600
2. Archives and related services	4,660,500	203,000	4,863,500
3. Service direction	653,600	22,000	675,600
4. Administrative operations	781,800	24,800	806,600
Total	17,970,300	758,000	18,728,300

	Amount
1968 appropriation	$17,580,000
Transfers	+73,500
Proposed supplemental for pay act increases	+316,800
1968 adjusted	17,970,300
Change	+758,000
1969 estimate	18,728,300

GENERAL STATEMENT

"This appropriation provides for basic operations dealing with management of the Government's archives and records and for operation of presidential libraries.

"In 1969 records in custody of the National Archives and Federal records centers will total 10.5 million cubic feet which represents 41 percent of the total Federal records. Reference services will total almost 7 million, a dramatic increase from 6.2 million in 1967 and 6.3 million estimated for 1968." (From the budget for 1969.)

Since 1961 overall workload and production, especially in the Federal records centers, has increased significantly. For example, from 1961 through 1967 records holdings in centers have increased from 6,700,000 cubic feet to 8,947,000 cubic feet and reference services have increased from 4,814,000 to 5,581,000. During this period transfers of functions (involving funds and 134 positions) were made from the General Accounting Office and from the Department of the Army. Despite this increased workload and the transfer of 134 positions over this period, improved methods and procedures have increased manpower utilization so that a reduction in overall employment has been possible. Total average employment was reduced from 1,832 in 1961 to 1,776 in 1967—a reduction of 56 plus the absorption of 134 transferred positions.

Continued emphasis on efficiency and economy will be necessary in 1968 as workload will increase in most activities while average employment declines to 1,746; down 30 from 1967.

The increase of $758,000 for 1969 consists of (1) $285,000 for reference service on IRS business tax returns (reimbursable from IRS in 1968), (2) $169,400 for increased costs in regional records centers, particularly for increased volume of records administered and reference services, space costs, and the erection of steel shelving in centers, (3) $44,600 to handle increased reference service on military records at the National Personnel Records Center as a result of the Vietnam buildup and veterans activities, (4) $155,000 for increased nondeferrable workload of the National Archives, (5) $45,000 for Presidential library workload including increased staff for Kennedy and Johnson library activities, and (6) $59,000 for other programs including support activities.

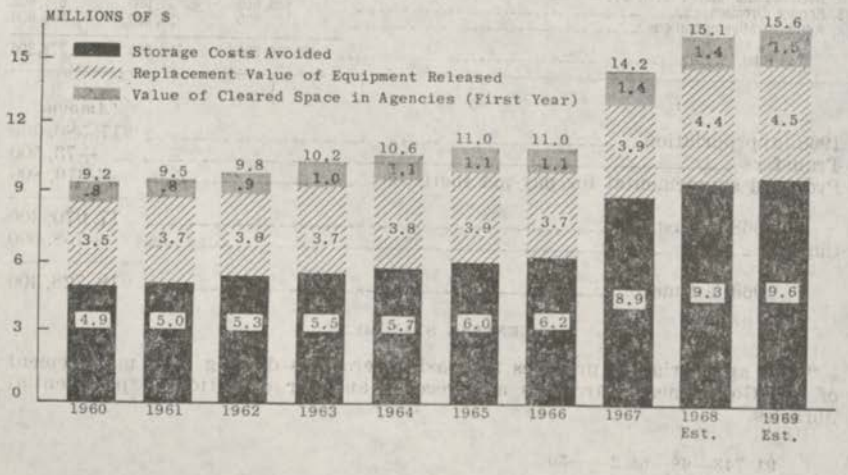
The estimate for 1969 includes $658,300 for total pay costs as a result of the Postal Revenue and Federal Salary Act of 1967.

APPROPRIATION LANGUAGE

"For necessary expenses in connection with Federal records management and related activities, as provided by law, including reimbursement for security guard services, contractural services incident to movement or disposal of records [$17,580,000] $18,728,300."

Record Centers Help Agencies Avoid Costs

(13 REGIONAL RECORDS CENTERS AND THE NATIONAL PERSONNEL RECORDS CENTER)



[In thousands]

Fiscal year	Records stored, end of year (cubic feet)	Reusable equipment released			Reassignable, space cleared (square feet)	
		File cabinets	Transfer cases	Shelving (linear feet)	Office	Storage
1960	6,602.9	60.9	7.9	399.5	319.8	133.0
1961	6,699.6	64.9	15.2	396.5	308.9	117.1
1962	7,163.5	57.9	9.3	642.2	287.4	274.7
1963	7,445.5	61.5	8.1	545.1	307.4	168.4
1964	7,691.0	65.8	10.7	427.7	351.2	101.0
1965	8,154.2	68.7	8.7	398.1	342.4	102.2
1966	8,410.3	65.3	5.7	398.5	331.2	88.9
1967	8,947.0	66.7	6.5	461.3	357.4	95.6
1968 (estimate)	9,320.0	68.3	6.7	472.1	365.8	97.8
1969 (estimate)	9,633.0	70.3	6.9	486.4	376.9	100.8

RECORDS MANAGEMENT AND CENTERS

Mr. EVINS. The storage costs avoided increase.

The replacement value of equipment released has gone up from $3.5 million to $4.5 million, and the value of cleared space continues to increase.

Tell us about that; the value of cleared space in agencies.

If you clear the space, it is available for something else, is it not?

Dr. BAHMER. That is right; and that is what we mean here. We count only blocks of 100 square feet or more of reassignable space and when we move materials from agency space into our centers, we believe that is a saving to the Government, because we release that much space to our colleagues in the Public Buildings Service to reassign for other purposes.

Mr. EVINS. By continuing to store agency records received in previous years more economically than agencies could have done, the centers avoided additional expenditures of $8 million.

How do you figure this?

Dr. BAHMER. Well, space economies are not necessarily just one-time economies.

If a record is to be kept for 5 years and we take it over in the Center and keep it 5 years, we save the agencies 5 years of space cost; and the savings indicated here are that kind of savings.

MILITARY AND CIVILIAN PERSONNEL REFERENCE SERVICES

Mr. EVINS. Take a look at the reference services chart. State and local institutions is 3 percent.

The Veterans' Administration has 20 percent of your references.

What are these?

Dr. BAHMER. These are the references that are sent by the Veterans' Administration to the National Personnel Records Center, which we operate at St. Louis, Mo. Whenever a veteran has a claim, the first thing the Veterans' Administration does is to get his health record from our Center.

Mr. EVINS. The Department of Defense, relative to reenlistments, retirements, and veterans' benefits, constitutes 37 percent of our military records.

Dr. BAHMER. That is reference service on the records.

Mr. EVINS. You also show other Federal agencies relating to military personnel records.

Dr. BAHMER. On employment, often a separated veteran wants a job

with the Government and the employing agency wants to know what his background has been, and asks for the information from the Records Center.

Mr. EVINS. We will place these pages in the record, 55 through 58.

(The pages follow:)

B. NATIONAL PERSONNEL RECORDS CENTER

	1967	1968	1969
Reference services	2,104,147	2,200,000	2,250,000
Unit cost	$1.87	$1.88	$1.86
Performance cost	$3,934,235	$4,145,000	$4,177,600
Number of items processed	5,325,724	5,000,000	5,000,000
Unit cost	$0.225	$0.253	$0.255
Performance cost	$1,196,355	$1,264,000	$1,276,000
Total performance cost	$5,130,590	$5,409,000	$5,453,600
Average employment	688	693	693

The National Personnel Records Center is a consolidation of the center for civilian personnel records which GSA established in 1951 and the center for military personnel records which DOD turned over to GSA in 1961.

Workload of this subactivity is measured by two work units: (a) number of reference services rendered which principally is providing documents and information upon request by other agencies and by veterans, and (b) number of items processed incident to interfiling personnel, pay, and medical documents received from other agencies for separated civilian and military personnel and interfiling data on some 2.5 million civilians presently employed by the Government.

More than 55 million case files of civilian personnel records are used to furnish information or documents for reemployment purposes, service transcripts, investigations, unemployment insurance, retirement, approprtionment, and location of personnel, and for many other needs of the Government and the individual.

In excess of 43 million personnel and medical files of veterans who have served in the Army, Navy, Marine Corps, Air Force, and Coast Guard constitute the military personnel records volume. To these are added, on a continuing basis for interfiling, records of Navy, Marine Corps, Air Force, and Coast Guard personnel as they are separated from the services. Approximately 37 percent of the inquiries on military personnel records are from Department of Deefnse relating to reenlistments, retirements, and veterans benefits. Other inquiries relate to specific adjudiciations by the Veterans' Administration, to veterans benefits provided by other Federal, State, and local agencies, and to requests directly from the veterans.

Nearly 70 percent of all inquiries on medical records pertain to Veterans' Administration's needs in its medical andother beneficiary programs. Other inquiries relate to claims, verification of active service for social security benefits, replacement of lost discharge certificates, verifying awards and decorations for services, investigations, identification and burials, medical treatments, sociological research, and for many other services to veterans or their beneficiaries.

Since the initial takeovers of separated civilian personnel records from Army, Navy, and Air Force in 1951 and military records in 1961 employment has been decreased dramatically despite a sugstantial workload increase, as shown below:

	1951	1961	1967	Percent of increase (+) or decrease (−)
Civilian records:				
Reference services	120,000		505,000	+321
Man-years	257		200	−22
Military records:				
Reference services		1,538,000	1,600,000	+4
Items processed		1,290,000	2,409,000	+87
Man-years		655	488	−25

Reference services will continue to increase in both 1968 and 1969. Improved methods and procedures and continued increased manpower utilization will result in economies sufficient to meet most of the classified pay increase and reduce the unit cost in 1969.

C. INDIAN TRIBAL CLAIMS RESEARCH

	1967	1968	1969
Total cost or estimate	$257,350	$296,300	$299,000
Average employment	23.0	26.0	26.0

This activity provides aid to the Department of Justice in defending the Federal Government against claims by Indian tribes. The reports submitted to the Department result from a detailed review of transcripts of the original Indian ledgers and journals from the years 1797 through 1951, United States Code, Senate hearings, laws and treaties, American State papers, Court of Claims decisions, and so forth. Formerly a function of the General Accounting Office, this responsibility was transferred to GSA in 1965 as the agency of the Government most appropriate to perform the work.

In order to help the Indian Claims Commission complete its trials by December 31, 1970, of all claims pending before the Commission, as required by Public Law 90-9 of April 10, 1967, this function requires continuation of the same man-years of effort in 1969.

D. PAPERWORK MANAGEMENT GUIDANCE

	1967	1968	1969
Total cost or estimate	$354,000	$401,500	$403,000
Average employment	22	25	25

Most Federal employees, in order to do their work, write letters, prepare reports, process forms, produce other transaction papers, and maintain records for their offices. A great deal of this activity is done manually, although a growing amount of it is done through use of automated equipment. Throughout the Federal establishment an estimated 8 to 10 billion pages are produced, handled, and filed each year. In recent congressional hearings (H. Rept. 2197, 89th Cong.) this cost has been estimated to be in excess of $7 billion a year.

Under its basic law GSA is mandated to take governmentwide leadership in holding down paperwork costs by providing Federal standards and promoting agency porgrams to deal with the paperwork problem. This GSA does through (*a*) developing regulations, (*b*) preparing handbooks which explain the background of the regulations, (*c*) developing workshops which demonstrate how to effectively implement the regulations, (*d*) evaluating Federal agency programs, and (*e*) management of governmentwide standard forms.

Six agencies are evaluated each year, and agreement is reached on the ways in which they can strengthen their controls over records creation with the specific work to be done in the forthcoming year identified as to priority and probable benefits.

The regulations and handbooks developed form the basis for agency programs. They require research in what are the best practices to be followed in designing forms, promulgating directives, and in the other paperwork areas. The advent of computer technology has changed every one of these areas, and is still bringing about changes. In 1969 one of the regulations to be developed will be documenting automatic data processing operations. One of the handbooks will be on information retrieval.

No increase in staffing is projected for 1969.

E. ASSISTANCE TO AGENCIES

	1967	1968	1969
Total cost or estimate	$874,959	$910,000	$915,000
Average employment	58	56	56

Very effective cost avoidance is gained under the assistance to agencies program which studies Government-wide paperwork on site through (*a*) surveys of paperwork activities in specific agencies or across agency lines to find more efficient and effective methods and procedures; (*b*) technical assistance workshops that furnish agencies' employees with the knowledge and skill to apply to specific paperwork responsibilities, and then reviews the resulting application; and (*c*) consultations with agencies about specific paperwork problems. Funding requested for this program is at the same level as 1967 and 1968. In 1968, through 50 surveys and 50 workshops, the program will provide over $8 million worth of benefits, including over 200,000 man-days saved or released for other work. The 1969 figures will be substantially the same. All figures for savings and other benefits are approved by the agencies receiving the assistance. Examples of assistance to agencies projects in 1967 are as follows:

EXAMPLES OF RESULTS OBTAINED FROM 1967 SURVEYS

AGENCY AND PROJECT	BENEFITS
Navy Department (Naval Air Systems Command): Source data automation of procurement documentation.	Faster processing; over 12 man-years saved.
Housing and Urban Development Department: Consolidation and realinement of data processing.	Better service and closer coordination; over 20 man-years saved.
Transportation Department, Federal Aviation Agency: Microfilming and reproduction of engineering drawings.	Faster retrieval and simple maintenance; savings of over $300,000 in space and processing costs.
Small Business Administration: Records and case processing.	Service time reduced; files simplified; over 10 man-years saved.
U.S. Army (Fort Eustis): Personnel processing procedures.	Centralized information; over 100 man-years saved.
National Aeronautics and Space Administration (Ames Research Center): Mail and records procedures.	Reduced time of mail delivery and of servicing records; over 8 man-years saved.
Department of Defense (Picatinny Arsenal): Mail, correspondence, and forms.	Reduced time of mail delivery; simplified forms processing; over 20 man-years saved.

RECORDS MANAGEMENT ASSISTANCE TO AGENCIES

Mr. EVINS. You point out some examples of results obtained in 1967: faster processing, over 12 years saved: better service and closer coordination, over 20 man-years saved: faster retrieval and simpler maintenance, savings of over $300,000 in space and processing cost; files simplified, over 10 man-years saved; centralized information, over 100 man-years saved.

How do you make these calculations, Doctor?

Dr. BAHMER. These are not our figures but the agency's figures on the savings that have been accomplished as a result of our records management assistance.

Mr. EVINS. We commend you for your efficiency.

INCREASE IN GOVERNMENT RECORDS

Mr. MARSH. I am impressed by your efforts and the reference to trying to hold down paperwork, but I notice that since 1967 your agency, to hold down paperwork, has increased by about 10-plus percent.

How much additional paperwork is being generated by the agency that has its duty to cut down on paperwork?

Dr. BAHMER. Are you referring to our agency?

Mr. MARSH. Yes.

Dr. BAHMER. We are the ones that have the staff responsibility for cutting down paperwork, and I would say that I do not think our own paperwork has increased appreciably.

I do not know that we have been able to fully stem the tide of increase in the total amount of Government records.

It is very difficult to do that, when new programs are established, such as medicare, that are bound to create enormous quantities of records. But we are doing, with the resources that we have, just as an effective job as we can, both to keep the volume of records produced within the reasonable limits required by administration and to increase the quality of the records, to make the system efficient. In the long run, those records that are permanent are going to come to the Archives and if they are records that were created properly and maintained properly, the job of the Archivist, in generations to come, is going to be much easier than if they are allowed to accumulate in a chaotic and inefficient manner.

PAPERWORK MANAGEMENT GUIDANCE

Mr. MARSH. Could you insert in the record some of the examples of the work that you have listed there in your first paragraph of item 2, pages II–57, that relates to scope of your work that you mentioned?

Dr. BAHMER. "Six agencies," is that the paragraph you are referring to, "that are evaluated each year"?

Mr. MARSH. This is the paragraph beginning, "Under its basic law, GSA is mandated," and so forth and so on.

Dr. BAHMER. Yes; we are speaking here of what we call, in our agency, paperwork management guidance.

This is an activity that is promotional and educational.

We are trying to get the agencies to establish their own programs for the control of records.

Mr. MARSH. How much of that do you accomplish by sending out additional paperwork, that requires paperwork responses and surveys and studies by the various agencies, and how much of it is instructional?

Dr. BAHMER. We do not require much in the way of filling out of reports and questionnaires.

I actually think we are deficient in some of these controls. One of the main processes that we use is to develop, in an area such as correspondence management or mail management, the best techniques that we can learn about, or that we know about.

Then we produce a handbook embodying these principles, and, on the basis of the handbook, a workshop, which the agency can use to indoctrinate their people as to the best practices in one of the several elements of paperwork.

PAPERWORK MANAGEMENT STUDIES

Mr. KNOTT. Mr. Marsh, have you ever seen one of these studies? There are six done that are listed here.

Could we send you those?

Mr. MARSH. I would appreciate it.

Mr. KNOTT. If you could see one or more of those, it would give you an idea of what the result is.

Mr. MARSH. If you could furnish for the record what the increase of the item is on page II–56 in reference to this, anything you can do to hold down this, to avoid duplication of paperwork, I think it would be very worthwhile.

Mr. KNOTT. We will be happy to do that.

(The information requested follows:)

The cost of the paperwork management guidance program in 1968 was 13 percent higher than 1967 ($354,000, increased to $401,500). The 1969 request maintains the 1968 level. All of the activities in the paperwork management guidance program do generate paper. But the amuont that they create is infinitesimal compared to the amount they eliminate.

For example, one offering of one technical assistance workshop on forms generates very little paperwork—announcements, schedules, practice papers, etc.—virtually all of which is disposable as nonrecord material. That same workshop, however, may immediately and directly eliminate 40,000 or 50,000 copies of current forms, any number of which may have previously been retained indefinitely.

Again, one evaluation report—an audit report relating to a given agency's paperwork practices—may use approximately 50 pages to recommend dozens of improvements, each of which may eliminate thousands of pieces of paper or may save thousands of dollars in paperwork processing.

While the reduction of paperwork is a fundamental and valuable part of the paperwork management guidance program, there is another equally important aspect; improved effectiveness. Aside from quantified considerations, the program produces results that allow agencies to do their jobs better—to be more responsive to the needs of their public.

RELATED SERVICES

Mr. EVINS. In line with what Mr. Marsh said, we had some testimony from one of the independent agencies in which they said, "We think GSA can do a great deal toward eliminating redtape and bureaucracy by assisting the commissions and agencies."

Gentlemen, we will look at some of your related services. The Office of the Federal Register serves the public, the Congress, the President, and all Government agencies, by publishing agency rules, the official text of laws, and Presidential messages.

Another function is the administration of Presidential libraries, on page II–64.

Nothing is really said to be official until it is published in the Federal Register. This is public notice.

Dr. BAHMER. That is right.

PRESIDENTIAL LIBRARIES

Mr. EVINS. You are operating about six Presidential libraries now.

Dr. BAHMER. In effect, yes.

There are four in being and two coming into being.

Mr. EVINS. Congress has directed the GSA to maintain, operate, and assist these libraries.

Your estimated cost of this is $687,000.

We think this is a very important constituent agency of GSA; and, Doctor, we commend you for your good work.

Dr. BAHMER. Thank you.

Mr. EVINS. Gentlemen, we will suspend now until 10 o'clock tomorrow morning.

THURSDAY, FEBRUARY 29, 1968.

NATIONAL HISTORICAL PUBLICATIONS GRANTS

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Allocation to Federal agencies	64	42	55
	2. Grants to State and local agencies and to nonprofit organizations and institutions	349	361	295
	Total program costs, funded	413	403	350
	Change in selected resources [1]	−44	−16	
10	Total obligations	369	387	350
	Financing:			
21	Unobligated balance available, start of year	−57	−37	
24	Unobligated balance available, end of year	37		
40	New obligational authority (appropriation)	350	350	350
	Relation of obligations to expenditures:			
71	Total obligations affecting expenditures)	369	387	350
72	Obligated balance, start of year	60	30	21
74	Obligated balance, end of year	−30	−21	
90	Expenditures	399	396	371
	Expenditures are distributed as follows:			
01	Out of current authorizations	399	366	350
02	Out of prior authorizations		30	21

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $60,000; 1967, $16,000; 1968, none; 1969, none.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
25.2	Services of other agencies	74	42	55
41.0	Grants, subsidies, and contributions	295	345	295
99.0	Total obligations	369	387	350

Mr. EVINS. The committee will come to order.

Mr. Reporter, at the outset, place in the record, under National Historical Publications Grants, pages II–72, II–73, and II–74.

You might also insert, Mr. Reporter, pages II–75 through II–77, showing some of these grants and that the amount of money is the same as requested last year with a small amount of unobligated balance carried forward of $37,000.

(The pages follow:)

Summary reconciliation of 1969 estimate to 1968 funds

1968 appropriation in annual act	$350,000
Unobligated balance brought forward	37,000
Obligation program for 1968	387,000
1969 change in program for 1969:	
Increase of allocations to Federal agencies	19,000
Decrease in grants to organizations and institutions other than Federal agencies	56,000
Total estimate for 1969	350,000

ANALYSIS BY ACTIVITIES

	1968	Decrease	Increase	1969
1. Allocations to Federal agencies	$36,000		$19,000	$55,000
2. Grants to State and local agencies and to nonprofit organizations and institutions	351,000	$56,000		295,000
Total obligations	387,000	56,000	19,000	350,000

1968 appropriation	$350,000
Change	
1969 estimate	350,000

GENERAL STATEMENT

This appropriation is to carry out the act of July 28, 1964, Public Law 88-383, authorizing not to exceed $500,000 for 1965 and for each of 4 succeeding years, for grants to State and local agencies and to nonprofit organizations and for allocations to Federal agencies for the purpose of collecting, reproducing, and publishing source material significant to the history of the United States. (From the budget for 1969.)

This grant program is necessary to achieve the purposes for which Congress revitalized the National Historical Publications Commission in 1950. It is essentially a program to make available to colleges and universities and other research institutions unique historical source material of importance to an understanding of the history of the United States. It will augment the research materials available to students, teachers, and scholars in our schools and ultimately assure a fuller understanding of American history by all citizens.

APPROPRIATION LANGUAGE

"For allocation to Federal agencies, and for grants to State and local agencies and nonprofit organizations and institutions, for the collecting, describing, preserving and compiling, and publishing of documentary sources significant to the history of the United States, $350,000, to remain available until expended."

JUSTIFICATION

Since its inception in 1965, 104 grants or allocations, averaging $12,924 each, have been made under this program. The grants are listed in the following tables, in the 1969 column of which are staff estimates of amounts required to continue the suppport of on-going projects. These staff estimates are likely to be much lower than the budget estimates for 1969 which the institutions and project groups will submit as a basis for formal Commission action.

Of the $350,000 requested in this appropriation, approximately 55 percent will be used for grants and allocations to projects of sufficient public interest to warrant conventional publication by printing and 45 percent for projects involving either microfilm publication only, or publication by printing of selected documents backed by complete publication on microfilm.

The Commission would prefer to keep these two categories approximately even and has nearly succeeded in the past. However, because most of the letterpress projects are continued over several years and are costlier each year due to increasing salaries, the microfilm publication program will probably have to be reduced to keep the entire program within the $350,000 requested. Final decisions on this point will be made by the Commission after its review of budgets submitted by the different projects.

The funds available in 1968 did not permit the initiation of any new projects involving publication by printing but only continued support for those projects begun in earlier years. The completion of microfilm publication programs at the Philadelphia Academy of Natural Sciences, the Kansas State Historical Society, the Nebraska State Historical Society, the Morristown National Historical Park, and the University of North Carolina, however, made funds available to initiate new microfilm publication programs at the Ohio Historical Society (Warren G. Harding papers), the Historical Society of Pennsylvania

(the Thomas Penn papers), the University of North Dakota (Dakota territorial records) and Standford University (David Starr Jordan papers).

The $350,000 requested for 1969 is the absolute minimum required to finance on-going projects. Support will have to be deferred for applications for assistance for such new projects as publishing the papers of Booker T. Washington at the University of Maryland, the papers of Robert Morris as superintendent of finance, 1781–84, at the City University of New York, and the Tench Coxe papers at the Pennsylvania Historical Society. Also deferred will be aid to other projects that have been discussed with various States and institutions, and for which formal proposals are in preparation, for both letterpress and microfilm publication projects involving the papers of Revolutionary leaders which should be completed in time for the bicentennial of the American Revolution. Examples are the papers of Jonathan Trumbull at the Connecticut State Library, the papers of General Philip Schuyler at the New York State Library, and the papers of George Washington at the University of Virginia. Nor is the Commission able to take the initiative and by means of challenge grants to promote projects that are ranked first in priority according to a canvass of over 100 leading historians of the United States. These are, in order, editions of the papers of Andrew Carnegie, Samuel Gompers, William Jennings Bryan, Oliver Wendell Holmes, Jr., and Andrew Jackson.

NATIONAL HISTORICAL PUBLICATIONS GRANTS

LETTERPRESS PUBLICATION PROJECTS

Grantee	Project	1965	1966	1967	1968 program	1969 estimate
Brown University	Papers of Isaac Backus		$9,000	$8,418	$9,000	
George Washington University	Papers of the 1st Federal Congress			15,858	36,632	$14,000
Jefferson Davis Association and Rice University	Papers of Jefferson Davis	$3,000	3,000	2,000	3,000	3,000
National Historical Publications Commission	Documentary history of the ratification of the Constitution and 1st 10 amendments.	52,000	53,000	52,000	38,000	55,000
	Papers of the 1st Federal Congress	21,000	26,800	−13,630	−2,354	
National Historical Publications Commission and South Carolina Historical Society.	Papers of Henry Laurens	11,800	11,800	14,410	17,975	18,000
North Carolina State Department of Archives and History	Papers of James Iredell			8,000		
South Carolina Archives Department	Papers of John C. Calhoun	18,900	13,947	11,719	11,400	15,000
Ulysses S. Grant Association and University of Southern Illinois.	Papers of Ulysses S. Grant	7,500		17,500	7,500	9,000
University of Illinois	Papers of John C. Fremont			3,750	7,380	4,000
University of Kentucky	Papers of Henry Clay	22,900		15,000	9,000	15,000
Maryland Historical Society	Feasibility study of Benjamin Latrobe papers			3,500		
University of Missouri	Circular letters of Congressmen to their constituents		5,000		2,000	
University of Tennessee and Tennessee Historical Commission	Papers of Andrew Johnson	16,098	18,621	22,234	16,000	16,000
University of Wisconsin	Documentary history of the 1st Federal elections			9,884	14,080	14,000
Vanderbilt University and Tennessee Historical Commission	Papers of James K. Polk	7,000		8,344	11,587	9,500
Wayne State University	Papers of Henry R. Schoolcraft	6,700		7,564	−139	
William & Mary College and Institute of Early American History & Culture.	Papers of John Marshall			15,000	15,000	15,000
Wyoming Historical & Geological Society of Wilkes-Barre, Pa	Susquehanna Co. papers		9,605	9,752	10,724	9,500
Total, letterpress publication projects		166,898	150,773	211,303	206,785	197,000

MICROFILM PUBLICATIONS PROJECTS

Academy of Natural Sciences of Philadelphia	Minutes and selected correspondence of the academy, 1812–1924.		$14,193		−$243	
Buffalo and Erie County Historical Society	Papers of Millard Fillmore		9,900	−$2,400	12,943	$15,000
	Papers of Peter B. Porter		2,408			
Carnegie Institute of Washington	George E. Hale papers			6,900		
Cornell University collection of regional history and university archives.	George Bancroft papers	$1,690	−869			
	Andrew D. White papers			15,720	12,520	15,000
Dartmouth College	Papers of Daniel Webster	21,577		29,381	13,662	5,000
Historical Society of Pennsylvania	Thomas Penn papers				3,250	
	Selected manuscript collections					15,000

Kansas State Historical Society	do	8,161		15,899		
Massachusetts Historical Society	do	22,100	14,470		16,000	
Minnesota Historical Society	do	18,300	18,300	15,400	9,250	9,250
Morristown (N.J.) National Historical Park	Lloyd W. Smith collection of Revolutionary War papers	15,356		19,249		
Nebraska State Historical Society	Selected manuscript collections	6,800	15,785	−3,950		
New Jersey Historical Society	do			12,550		
New Mexico State Records Center and archives	Records of New Mexico under Spanish and Mexican rule, 1688–1846.			15,509	16,852	
New York University	Papers of Albert Gallatin		20,565	14,750	19,385	5,000
Ohio Historical Society	Papers of Warren G. Harding				13,430	24,880
Pennsylvania Historical and Museum Commission	Selected manuscript collections	9,672			12,221	16,388
Stanford University	David Starr Jordan Papers				20,445	15,140
State Historical Society of Wisconsin	Selected manuscript collections				−4,601	
University of North Carolina (southern historical collection)	do	10,500	23,140		13,600	14,000
University of North Dakota	Dakota Territorial records	21,660	23,300			
University of Notre Dame	Selected manuscript collections		15,141	19,039	17,683	13,331
University of Texas	Spanish records of Texas, 1717–1836		25,027		3,818	5,011
University of Virginia	Selected manuscript collections	8,285	221			
University of Washington	do					
Total, microfilm publication projects		144,101	181,581	158,047	180,215	153,000
Total, national historical publications grants		310,999	332,354	369,350	387,000	350,000

PRESENT PROGRAM

Mr. EVINS. Dr. Bahmer was to send his remarks on the accomplishments of this section which we can insert in the record at this point. (The information follows:)

The National Historical Publications Commission uses funds, as was intended, from the Federal Government, State governments, and private sources in carrying out its legal mandate to "cooperate with and encourage appropriate Federal, State, and local agencies and nongovernmental institutions, societies, and individuals in collecting and preserving and, when it deems such action to be desirable, in editing and publishing the papers of outstanding citizens of the United States and such other documents as may be important for an understanding and appreciation of the history of the United States." It is difficult to understand how these resources are fitted together in support of each other without presenting the entire present program of the Commission, which appears below.

Federal funds in the form of grants to the sponsoring institutions that take responsibility, help to support the projects listed in categories IB and II of the present program, but supply somewhat less than 50 percent of their cost, the other support coming from the sponsoring institutions themselves and other sources. Projects listed in categories IA and IC are supported professionally by the Commission but financially from funds other than those available under this Federal grant program. The Commission, however, has helped the sponsoring institutions to find this other support, including the $2 million from the Ford Foundation, and could not have accomplished this had not the Federal Government assumed a share of the total cost. Funds appropriated for this grant program are thus used to stimulate, stabilize, and hold together a much larger program, which would fall to the ground in large part were they not forthcoming.

THE PRESENT PROGRAM OF THE NATIONAL HISTORICAL PUBLICATIONS COMMISSION

FEBRUARY 1968

I. Conventional printed documentary publications

A. Projects supported by a Ford Foundation grant to the National Archives Trust Fund for the Commission's use for these specific projects. (The grant of $2 million was made after Public Law 88-383 was passed in 1964 and more than matches the $1,400,000 since appropriated under that legislation.) Publication is without cost to the Federal Government.

(1) *The Papers of Thomas Jefferson.*—Princeton University, sponsor; Julian P. Boyd, editor. (17 volumes published to date; volume 18 in press.)

(2) *The Papers of Benjamin Franklin.*—American Philosophical Society and Yale University, cosponsors; Leonard W. Labaree, editor. (12 volumes published to date by Yale University Press; volume 13 in press.)

(3) *The Papers of Alexander Hamilton.*—Columbia University, sponsor; Harold C. Syrett and Jacob E. Cooke, editors. (13 volumes published to date by Columbia University Press; volumes 14 and 15 in press.)

(4) *The Adams Papers* (John, John Quincy, and Charles Francis Adams).—Massachusetts Historical Society, sponsor; Lyman H. Butterfield, editor (13 volumes published to date by Harvard University Press.)

(5) *The Papers of James Madison.*—Universities of Virginia and Chicago, cosponsors; William T. Hutchinson and William M. E. Rachal, editors (5 volumes published to date by University of Chicago Press.)

B. Projects assisted by appropriated funds under Public Law 88-383. (All volumes published by university presses are without cost to the Government.)

(6) *Documentary History of the Ratification of the Constitution and First Ten Amendments.*—National Historical Publications Commission, sponsor; Robert E. Cushman, editor. (Copy for volume I at Government Printing Office.)

(7) *Documentary History of the First Federal Congress.*—National Historical Publications Commission and George Washington University, cosponsors; Linda De Pauw, editor. (No volumes published to date; copy for first two ready for press.)

(8) *The Papers of John C. Calhoun.*—South Carolina Archives Department, sponsor; W. Edwin Hemphill, editor (3 volumes published by University of South Carolina Press.)

(9) *The Papers of Henry Clay.*—University of Kentucky, sponsor; James F. Hopkins, editor. (3 volumes published to date by University of Kentucky Press.)

(10) *The Papers of Andrew Johnson.*—University of Tennessee and Tennessee Historical Commission, joint sponsors; LeRoy P. Graf and Ralph W. Haskins, joint editors. (Volume I published in 1967 by University of Tennessee Press.)

(11) *The Correspondence of James K. Polk.*—Vanderbilt University and Tennessee Historical Commission, joint sponsors; Herbert Weaver, editor. (Volume I expected late in 1968, to be published by Vanderbilt University Press.)

(12) *The Papers of Henry Laurents.*—South Carolina Historical Society, sponsor; Philip M. Hamer, editor. (Volume I expected about June 1968, to be published by University of South Carolina Press.)

(13) *The Papers of Ulysses S. Grant.*—The Ulysses S. Grant Association and the University of Southern Illinois, joint sponsors; John Y. Simon, editor (Volume I published in 1967 by Southern Illinois University Press.)

(14) *The Papers of Jefferson Davis.*—Rice University and the Jefferson Davis Association, joint sponsors; Haskell Monroe, editor. (No volumes published to date.)

(15) *The Papers of Henry R. Schoolcraft.*—Wayne State University, sponsor; Philip Mason, editor. (Two volumes published to date by Michigan State University Press.)

(16) *The Papers of Isaac Backus.*—Brown University, sponsor; William G. McLoughlin, editor. (Volumes 1 and 2 to be published late in 1968 by Brown University Press.)

(17) *The Papers of John Charles Fremont.*—University of Illinois, sponsor; Donald Jackson, editor. (No volumes published to date.)

(18) *The Papers of John Marshall.*—William and Mary College and the Institute of Early American History and Culture, joint sponsors; Stephen G. Kurtz, editor. (No volumes published to date.)

(19) *The Susquehannah Company Papers.*—Wyoming Historical Geological Society, sponsor; Robert J. Taylor, editor. (Four volumes published; volumes 5 and 6 expected March 1968; Cornell University Press.)

(20) *Circular Letters of Congressmen to Their Constituents, 1789–1829.*—University of Missouri, sponsor; Noble E. Cunningham, Jr., editor. (No volumes published to date.)

(21) *Documentary History of the First Federal Elections.*—University of Wisconsin and Wisconsin Historical Society, joint sponsors; Merrill Jensen, editor. (No volumes published to date.)

(22) *The Papers of James Iredell.*—North Carolina Archives and History Department, sponsor; Don Higginbotham, editor. (No volumes published to date.)

C. Other projects endorsed by the Commission which are assisted professionally, primarily by searching for and supplying photocopies of documents in Government custody and often also financially by helping to secure funds from sources other than those available under Public Law 88-383.

(23) *The Letter Books and Diary of Robert ("King") Carter of Virginia.*—Virginia Historical Society, sponsor; Francis L. Berkeley, Jr., editor. (No volumes published to date.)

(24) *The Correspondence of John Dickinson.*—Public Archives Commission of Delaware and Friends of the John Dickinson Mansion, cosponsors; Leon deValinger, Jr., editor. (No volumes published to date.)

(25) *The Papers of George Mason.*—Regents of Gunston Hall and Institute of Early American History and Culture, joint sponsors; Robert A. Rutland, editor. (No volumes published to date.)

(26) *The Journals of Zebulon Montgomery Pike, with Letters and Related Documents.*—University of Illinois, sponsor; Donald Jackson, editor. (Project completed. Two volumes published by University of Illinois, 1966.)

(27) *Th ePapers of Archbishop John Carroll.*—American Catholic Historical Association and Catholic University, joint sponsors; William D. Hoyt, Jr., editor. (No volumes published to date.)

(28) *The Papers of Rutherford B. Hayes.*—Rutherford B. Hayes Memorial Library, sponsor; Watt P. Marchman and others, editors. (Two volumes published.)

(29) *The Papers of John Jay.*—Sponsored by Columbia University; Richard B. Morris, editor. (No volumes published as yet.)

(30) *The Papers of General Philip J. Schuyler.*—University of the State of New York, sponsor; Milton Hamilton, editor. (No volumes published to date.)

(31) *The Letters and Journals of James Fenimore Cooper.*—James F. Beard, editor. (Four volumes published by Harvard University Press.)

(32) *The Papers of Woodrow Wilson.*—Woodrow Wilson Foundation and Princeton University, joint sponsors; Arthur S. Link, editor. (Three volumes published by Princeton University Press.)

(33) *The Papers of Joseph Henry.*—American Philosophical Society, Smithsonian Institution, and National Academy of Sciences, sponsors; Nathan Reingold, editor. (No volumes published to date.)

(34) *The Journals of Stephen H. Long's Mississippi River Expeditions.*—Minnesota Historical Society, sponsor; Lucile Kane, editor. (Begun July 1, 1966.)

(35) *The Correspondence of Washington Irving.*—Modern Language Association, sponsor; H. L. Kleinfield and Ralph Aderman, editors. (No volumes published to date.)

(36) *The Papers of Booker T. Washington.*—University of Maryland, sponsor; Louis R. Harlan, editor. (No volumes published to date.)

(37) *The Papers of Robert Morris as Superintendent of Finance, 1781–84.*—Queens College of the City University of New York, sponsor. E. James Ferguson, editor. (No volumes published to date.)

(38) *The Papers of Jonathan Trumbull, Sr.*—University of Connecticut and Connecticut State Library, sponsors. Albert E. Van Dusen and Glenn Weaver, editors. (No volumes published to date.)

D. Projects supported out of regular appropriations to other agencies.

(39) *The Territorial Papers.*—The National Archives, sponsor; John P. Bloom, editor. (Twenty-six volumes published by Government Printing Office. Volume 27 in press.)

(40) *The Public Papers of the Presidents.*—The National Archives, sponsor. (Twenty-five volumes published.)

(41) *The Papers of Franklin D. Roosevelt.*—Franklin D. Roosevelt Library, sponsor; Edgar B. Nixon, editor. (Two volumes published; two additional volumes in press.)

(42) *Naval Documents of the American Revolution.*—U.S. Navy Department, sponsor; William Bell Clark, editor. (Two volumes published.)

(43) *Papers Relating to the Foreign Relations of the United States.*—U.S. State Department, sponsor; S. Everett Gleason, editor. (In many series since 1861. Oldest continuing documentary publication of the U.S. Government.)

II. Documentary publications on microfilm. (All supported by appropriations under Public Law 88–383.)

A. Projects involving as a first stage collection and microfilming of all papers that can be located in reasonable time. (It is hoped an annotated and printed edition of selected papers will follow.)

(44) *The Papers of Daniel Webster.*—Dartmouth College, sponsor; Charles Wiltse, editor. (Begun autumn 1965.)

(45) *The Papers of Albert Gallatin.*—New York University, sponsor; Helene H. Fineman, acting editor. (Begun June 1, 1966.)

(46) *The Papers of Millard Fillmore.*—Buffalo and Erie County Historical Society, sponsor; Lester Smith, editor. (Begun autumn 1966.)

B. Institutional programs involving microfilm publication usually of selected collections in the institution's custody (see catalog for collections completed with separate pamphlet guides to each).

(47) *Academy of Natural Sciences of Philadelphia.*[1]—Minutes and correspondence of the academy, 1812–1924: 38 rolls.

(48) *Buffalo and Erie County Historical Society.*—Peter B. Porter papers: work in progress.

(49) *Cornell University (Collection of Regional History and University Archives).*—George Bancroft family papers: seven rolls. Andrew D. White papers: work in progress.

(50) *Historical Society of Pennsylvania.*—Thomas Penn papers: work in progress.

(51) *Kansas State Historical Society.*[1]—New England Emigrant Aid Company records: nine rolls; Senator Joseph L. Bristow papers: 119 rolls; and nine other microfilm publications—in all totaling 210 rolls of microfilm.

(52) *Massachusetts Historical Society.*—Benjamin Lincoln, Timothy Pickering, Winthrop Sargent, and Artemas Ward papers on 13, 69, seven, and five rolls respectively. Lemuel Shaw and Forbes family (China trade) papers: work in progress.

(53) *Minnesota Historical Society.*—Lawrence Taliaferro papers, four rolls,

and Ignatius Donnelly papers, 167 rolls. James W. Taylor, Henry H. Sibley, and Alexander Ramsey papers: work in progress.

(54) *Morristown National Historical Park.*[1]—Smith-Park autograph collection, 69 rolls.

(55) *Mount Wilson Observatory—Carnegie Institution of Washington.*—George E. Hale papers, 100 rolls: work nearing completion.

(56) *Nebraska State Historical Society.*[1]—J. Sterling Morton papers, 78 rolls, Nebraska Farmers' Alliance records 1887–1901, 7 rolls, Robert W. Furnas papers, 13 rolls, Samuel Maxwell papers, eight rolls, and Samuel M. Chapman papers, 10 rolls.

(57) *New Jersey Historical Society.*—John Stevens family papers: work in progress.

(58) *New Mexico State Records Center and Archives.*—Spanish records of New Mexico, 1621–1821, 22 rolls. Mexican records of New Mexico, 1821–46: work in progress.

(59) *Ohio Historical Society.*—Warren G. Harding papers: work in progress.

(60) *Pennsylvania Historical and Museum Commission.*[1]—Provincial Council records, 1682–1776, 26 rolls; John Nicholson papers, 21 rolls; and Baynton, Wharton, Morgan papers, 10 rolls.

(61) *Stanford University.*—David Starr Jordan papers: work in progress.

(62) *State Historical Society of Wisconsin.*—Henry Demarest Lloyd and Morris Hillquit papers: work in progress.

(63) *University of North Carolina (southern historical collection).*[1]—Claude Kitchin papers, 42 rolls; Henry C. Warmoth papers, 22 rolls; Duff Green papers, 25 rolls; Benjamin C. Yancey papers, 16 rolls; and 13 other collections—in all totaling 138 rolls of microfilm.

(64) *University of North Dakota.*—Records of Dakota Territory, 1861–89: work in progress.

(65) *University of Notre Dame.*[1]—Orestes A. Brownson papers, 19 rolls; Thomas Ewing, Sr., papers, six rolls; William T. Sherman family papers, 15 rolls; and records of (New Orleans) diocese of Louisiana and the Floridas, 1576–1803, 12 rolls.

(66) *University of Texas.*—"Bexar Archives" of Spanish and Mexican rule in Texas, 1717–1803, 31 rolls. Some archives, 1804–21, and 1822–36: work in progress.

(67) *University of Virginia.*[1]—Lee family papers, eight rolls; Hamond naval papers, three rolls; Ingram's Edgar Allan Poe collection, 1817–1916, nine rolls; Robert M. T. Hunter papers, 13 rolls; and two other collections—in all, totaling 38 rolls of microfilm.

(68) *University of Washington.*[1]—Richard A. Ballinger papers, 13 rolls; Oregon Improvement Co. records, 37 rolls; Washington territorial government records, 1853–75, one roll; and six other collections—in all, totaling 70 rolls of microfilm.

III. Other activities:

(69) Review and processing of applications and proposals for assistance to, or merely endorsement of, documentary publication projects such as those described under I and II above.

(70) Provision of professional advice and assistance to approved projects, including searches for documentary materials in the National Archives, the Library of Congress, and other Washington repositories when pertinent to the project, and the supply without cost to the project of photocopies of such documents from holdings of the National Archives.

(71) Making (to quote the legislative mandate) "plans, estimates, and recommendations for such historical works and collections of sources as it deems appropriate for printing or otherwise recording at the public expense."

(72) Training in editing of historical documents. This program, financed chiefly by the Ford Foundation, is planned to consist of four elements:

A. Those in operation:

(1) Conferences of editors of letterpress and microfilm publications, both separately and together.

(2) Five Commission fellowships each year in advanced historical editing. These fellows are chosen each year by editors of Commission projects from applicants who have completed all requirements for the Ph. D. degree in American history or all requirements except their dissertations, with the

[1] Current program completed.

former to be preferred. They work for a full calendar year with a project, and their stipends vary from $6,500 to $9,000, depending on preparation and family allowances.

B. Those planned:

1. A 2-week intensive summer institute at the National Archives, or elsewhere, for holders of M.A. or Ph. D. degrees in American history who are interested in editing source materials and desire special training in this activity. (To be held first in the summer of 1969.)

2. Financial assistance to universities offering approved courses on the graduate level in the editing of historical source materials.

(73) *Writings on American History.*—Annual volumes for 1950–58 were produced by members of Commission staff for the American Historical Association, which distributed them as volume II of its annual report for these years. Four volumes of the Writings, for the years 1959–61, are now at the Government Printing Office.

(74) "Survey on Use of Original Sources in Graduate History Training." Walter Rundell, director. A 2-year study involving visits to all leading universities offering graduate programs in American history and a representative sample of others, supplemented by questionnaires, reviews of dissertations, and so forth. This survey is expected to result in a published report in late 1968 or early 1969. (Financed by Ford Foundation.)

Operating Expenses, Transportation and Communications Service

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Transportation services	2,286	2,356	2,411
	2. Communication services	1,768	1,847	2,252
	3. Motor vehicle management	390	415	420
	4. Public utilities services	118	125	127
	5. Service direction	601	641	649
	6. Administrative operations	714	644	651
	Total program costs, funded [1]	5,877	6,028	6,510
	Change in selected resources [2]	3		
10	Total obligations	5,880	6,028	6,510
	Financing:			
25	Unobligated balance lapsing	20		
40	New obligational authority (appropriation)	5,900	5,880	6,510
44	Proposed supplemental for civilian pay act increases		148	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	5,880	6,028	6,510
72	Obligated balance, start of year	381	211	47
74	Obligated balance, end of year	−211	−47	−41
77	Adjustments in expired accounts	−14		
90	Expenditures excluding pay increase supplemental	6,036	6,050	6,510
91	Expenditures from civilian pay act supplemental		142	6
	Expenditures are distributed as follows:			
01	Out of current authorizations	5,670	5,983	6,469
02	Out of prior authorizations	366	209	47

[1] Excludes adjustments of prior year costs of −$10,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $9,000 (1967 adjustment, −$5,000); 1967, $7,000; 1968, $7,000; 1969, $7,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	4,269	4,496	4,710
11.3	Positions other than permanent	14		
11.5	Other personnel compensation	13	20	20
	Total personnel compensation	4,296	4,516	4,730
12.0	Personnel benefits	322	342	361
21.0	Travel and transportation of persons	60	84	84
	Payment to interagency motor pools	4	5	5
22.0	Transportation of things	2	2	2
23.0	Rent, communications, and utilities	240	198	198
24.0	Printing and reproduction	34	33	33
25.1	Other services	879	805	1,054
25.2	Services of other agencies	16	17	17
26.0	Supplies and materials	27	28	28
99.0	Total obligations	5,880	6,028	6,510

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	391	395	411
Full-time equivalent of other positions	1	0	0
Average number of all employees	379	380	390
Average GS grade	9.9	9.9	10.0
Average GS salary	$11,236	$11,841	$11,989

Mr. EVINS. Let us now turn to Transportation and Communications Service. This is under Douglas E. Williams, Commissioner; and Robert B. Conrad, Deputy Commissioner.

This Service is responsible for improving management practices and for providing transportation, communications, and other public utilities services for all civilian agencies; operating the civilian agencies' telecommunications system compatible with the Department of Defense systems; developing Governmentwide policies and procedures for improving the overall efficiency of the Government-owned motor vehicles fleet; operating interagency motor vehicle pools and protecting the Government's interest as a user before Federal and State regulatory bodies.

In addition, this Service renders transportation services on a reimbursable basis to the Department of Health, Education, and Welfare, the Department of Defense, and the Agency for International Development.

The services rendered include the negotiation of contracts, the routing of shipments, issuance of shipping instructions and related shipping documents, and the processing of transportation loss and damage claims.

Well, you have a wide variety of functions, Mr. Williams. Tell us about your agency, what you have accomplished, what you are doing, and what your needs are.

TCS ACCOMPLISHMENTS AND OBJECTIVES

Mr. WILLIAMS. It will be a pleasure.

I think it is fair to say that we have made considerable progress in the transportation and communications area since we last met, Mr. Chairman.

It may be helpful for you to recall that in the broadest sense, expressed in a different way from what you have just said, we have

two purposes in life. The first is to provide competent advice and assistance to all agencies of the Government in their handling of transportation, communications, and public utility needs.

Secondly, it is to provide centralized transportation, communications, and motor equipment services to meet as many of their general, or shall we say common needs, as may be possible and to do this in the most economical manner.

The majority of our efforts in the past, which included last year, were devoted to the centralized services which are characterized by the provision of motor pool vehicles, the transportation of things and people as well as communications services.

ASSISTANCE TO AGENCIES

However, we are increasingly interested in attempting to emphasize our advice and assistance role because we feel that we are competent to do this, and it does pay off handsomely in terms of the small expenditures which are necessary to provide this service.

During 1967 we increased our transportation advice and assistance to agencies with no additional manpower. This was made possible through our increase in productivity.

We anticipate additional increases in 1968 in this productivity and hope to continue the trend in 1969, still without additional manpower.

Mr. EVINS. You are asking for 10 additional manpower slots, illustrated on page II–79.

Mr. WILLIAMS. Not in the transportation area.

Mr. EVINS. In the overall division.

Mr. WILLIAMS. Yes sir; 10 man-years of effort in the operating expense budget.

Mr. EVINS. Mr. Williams, you give advice to the agencies. They call upon the GSA for information and suggestions, but each agency handles their own problems; do they not? If they want some of their personnel to travel, they can call up the Travel Bureau to arrange the transportation for them.

What do you handle?

Mr. WILLIAMS. We provide the expert advice and assistance in how to best do it and tell them which is the most economical mode of transportation.

Mr. EVINS. Whether to go by plane or train?

Mr. WILLIAMS. Yes, sir; we provide them with that advice, among other things.

Mr. EVINS. How many agencies call upon you to make a decision as to whether to go by plane or train?

Mr. WILLIAMS. Well, we served 55 agencies in various categories last year.

Mr. EVINS. What was the nature of the inquiries.

Mr. WILLIAMS. As to the movement of their people and possessions and some movement of freight.

Mr. EVINS. They do not call on you for travel advice for employees; do they?

Mr. WILLIAMS. No, sir; but in group travel we do arrange special rates which are available to the agencies if they will travel in a group. This is through our negotiations with the carriers.

We make these arrangements for them if they wish to do that. However, we do not tell them they must go by bus or by plane. This is their decision.

REIMBURSABLE TRANSPORTATION SERVICES

Mr. EVINS. You mentioned three agencies that you serve on a reimbursable basis, the Department of Health, Education, and Welfare; Defense Department; and the Agency for International Development.

Mr. WILLIAMS. Yes, sir.

Mr. EVINS. Are those the only three agencies to which you render transportation service and advice?

Mr. WILLIAMS. No, sir.

Mr. EVINS. You say in addition these three agencies are on a reimbursable basis.

Mr. WILLIAMS. These are the three agencies who reimburse us for special functions which we perform.

Mr. EVINS. Other agencies have their own capability; these do not?

Mr. WILLIAMS. Other agencies do perform these special functions for themselves.

Mr. EVINS. The Agency for International Development, most of this shipment is overseas.

Mr. WILLIAMS. Yes, sir; that is correct.

Mr. EVINS. You give them advice on their personnel as well as their family belongings, if there is a family going to work for AID overseas?

Mr. WILLIAMS. We do.

Mr. EVINS. Do you help them with the shipment of their household furnishings?

Mr. WILLIAMS. We do it for them.

COMMUNICATIONS SERVICES

Mr. EVINS. Very good.

Now, tell us what you do in communications.

The Defense Department has its own communications system and I believe you are responsible for an integrated communications system in the civilian agencies.

Mr. WILLIAMS. That is correct, sir.

Mr. EVINS. Tell us how this is set up and how it works.

Mr. WILLIAMS. GSA provides a centralized, long-distance service which largely replaces the individual systems which once existed. This is a leased network which is managed by GSA and it takes care of the long-distance calls of the civilian agencies of the Government. We are presently handling about 56 million calls.

Mr. EVINS. Fifty-six million calls annually?

Mr. WILLIAMS. Yes. This is the going rate. The cost of these calls is 66 percent less than the commercial rate. We accrue tremendous savings to the Government.

Mr. EVINS. What is the amount?

Mr. WILLIAMS. Roughly $85 million are saved as a result of the use of this network as opposed to a similar number of calls over commercial networks over the year.

Mr. EVINS. Are these calls from a particular agency to their branch or regional office?

Mr. WILLIAMS. Yes, they are countrywide, from every agency to every other agency. They are connected with the largest cities with concentrated populations.

You can call to any place in the United States over this network.

Mr. EVINS. This is the leased wire service from the telephone company, for which the General Services Administration pays. You have to pick up the bill and the agencies have to reimburse you; is that correct?

Mr. WILLIAMS. That is correct.

BILLINGS TO AGENCIES FOR COMMUNICATIONS

Mr. EVINS. How frequently do you bill the agencies?

Mr. WILLIAMS. On a quarterly basis, sir.

Mr. EVINS. You have to have a lot of employees to do this, whereas the telephone company bills the individual agencies.

Mr. WILLIAMS. This would cost us more to do it that way.

Mr. JOHNSON. Mr. Chairman, I handle the billing process for this fund.

We have arranged with the agencies that we will give them a set figure on telephone usage in time to get it in their budgets. We bill against that usage. If their usage goes up in a subsequent year, then we allow them time to come to you and ask for the funds. We bill them against the set figure on a quarterly basis.

Mr. EVINS. In every one of our budgets we have requested funds for telephone services. We appropriate it to the agencies and they in turn pay you, the GSA, on a usage basis?

Mr. JOHNSON. Yes.

AMOUNT OF BILLINGS

Mr. EVINS. Volumewise, in the civilian agencies, Mr. Williams, tell us how much this amounts to on an annual basis.

Mr. WILLIAMS. The long-distance service?

Mr. EVINS. All of your services. What is the total bill?

Mr. WILLIAMS. It will be something in excess of $100 million for voice and record traffic in 1969.

Mr. EVINS. A $100 million telephone bill, per year?

Mr. WILLIAMS. This does include the record portion of the system. The invoice portion is $90 million.

Mr. JOHNSON. The record program is $11,505,000 in 1969.

Mr. EVINS. It runs roughly $102 million annually, then.

Mr. WILLIAMS. The telephone bill is $90 million and the records system is $11.5 million.

Mr. EVINS. That is the total communications bill?

Mr. WILLIAMS. That is right for those services provided by the Federal telecommunications system.

SAVINGS UNDER GSA SYSTEM

Mr. EVINS. Didn't you state this would be $85 million more if you did not have the GSA system?

Mr. WILLIAMS. May I correct the record? There are two aspects of the communications.

With respect to the voice portion of the system, the long-distance portion, the savings to the Government is $85 million.

Mr. EVINS. As to the voice?

Mr. WILLIAMS. As to the voice.

SAVINGS IN RECORDS SYSTEM

Mr. EVINS. How much is the savings on the records system?

Mr. WILLIAMS. We are operating at about 1 cent per word on the records system and the comparable commercial system rate is about 3 cents per word.

Mr. EVINS. How much do you calculate this savings is, so we can get a complete picture?

Mr. KNOTT. It is again about the same percentage, Mr. Chairman.

Mr. WILLIAMS. It is about the same percentage, but to give you a figure I will have to compute it. I will supply that for the record.

(The information requested follows:)

Savings of $12 million are estimated in fiscal year 1968, based on our current volume projection.

METHOD OF DETERMINING SAVINGS

Mr. BOLAND. Do the records billings that you send to the various agencies, this is the intercity voice network as I understand it, do the records indicate that the savings are as great as Mr. Williams indicates?

Can you actually put your finger on the records from 1967 and 1968 and show that there is a reduction?

Mr. JOHNSON. Yes sir, as you know we have two kinds of service, local service which is just like your own phone——

Mr. BOLAND. Yes.

Mr. JOHNSON. Intercity service—In 1967 we spent $35 million on local service, and $40 million on intercity service in support of Government agencies. We not only service Government agencies but many Congressmen's home districts.

Mr. BOLAND. Yes, I understand.

Mr. JOHNSON. We take a sample periodically of agencies calls. If you took those same calls and priced them commercially, you would arrive at the cost savings benefit that Mr. Williams gave you.

In other words, we take one call from Washington to California against the commercial rate and this would be your savings. It is fairly easy to document your savings in this area.

Mr. BOLAND. Because of this, the agencies that are using it are billed for a lesser amount than they were a few years back.

Mr. JOHNSON. The opposite side of that question is that most agencies usage has gone up during the interim period.

When you compare it, you have to take off the increased usage.

Mr. JONAS. I would like for you to get credit for everything you do, but actually when you get right down to analyzing it, with the comparison you make it is not reflective of a true savings because agency by agency could contract with the telephone company for a blanket

rate and would not have to pay commercial rates on all their calls. Is that not true?

Mr. WILLIAMS. That is not entirely correct, sir.

Mr. JONAS. I am inclined to believe that they have some wholesale rates that big users of long-distance service get annual rates that are substantially lower than commercial rates.

Mr. WILLIAMS. They are nowhere near the rates we enjoy.

SAVINGS COMPARISON

Mr. JONAS. I know, but they would not be $85 million more. I do not believe you can document that you save that much. You are basing it on a comparison with commercial rates on a single telephone call.

Mr. JOHNSON. Mr. Jonas, you are correct. It is a question of which way you want to compare it.

We can get a pretty good base for comparison against the normal commercial rate, but we cannot, without refiguring the whole government, get one on the basis of individual agency wholesale rates.

Mr. JONAS. It is not really fair and accurate to say you claim a saving of $85 million because you compare your cost with what so many individual telephone calls would be at the commercial rate.

Mr. JOHNSON. That is the reason we qualify it and say the cost savings is figured against the normal commercial rate, per call.

Mr. JONAS. When you say that I have no quarrel with it, but I do not believe it would work out to $85 million in savings if every agency did the same thing; is that not right?

GSA-CONTROLLED NETWORK

Mr. WILLIAMS. Yes, sir, when compared that way. There is one other aspect of our telephone network. This is a GSA controlled network and it is available to us in the case of an emergency. It is under our control. No one can use it except the civil agencies of the Government. It is there if you run into an emergency.

The difficulty with the public direct distance dialing system in event of emergency is that it is first come, first served. We have the GSA-controlled network available to us. That is part of our responsibility in contributing to the National Communications System.

Mr. JONAS. You would claim a fantastic savings in dollars if you calculated what it would cost to buy all the motor vehicles you buy at retail rates, but you make a contract and buy in bulk.

Mr. KNOTT. There again, you get a statutory limitation on it and it is easy to calculate. There is no magic formula for any of these savings computations.

I think it is unfortunate that we have to talk in terms of computed savings.

I think that in almost any common service that you render it can be said that it is axiomatic that if it is performed on a centralized basis, savings will accrue. How much they will be in a particular case—it would be hard to prove.

Mr. EVINS. We have information that the total telephone bill of all the civilian agencies, voice and records, is about $102 million a year. If they bought this at the commercial rates you estimate on the voice it

would be $80 to $85 million more and you will supply for the record the additional savings on the records system.

Mr. JOHNSON. We have agreed to supply that.

OVERSEAS SHIPMENTS AND CENTRALIZATION OF BILLS OF LADING

Mr. EVINS. Most of these shipments are overseas, are they not?

Mr. JOHNSON. Freight, primarily Army movements. We are beginning a study with the Bureau of the Budget and the GAO at the Comptroller General's invitation to try to come up with a centralized payment of Government bills of lading and TR's. GAO wants us to take a hard look and see if we can set up one central point and if this will save the Federal Government any money.

We have a working group at GSA to look into this.

TELEPHONE RATE INCREASE

Mr. EVINS. The telephone company recently filed with the Federal Communications Commission for a rate increase.

What effect, if granted, will this have on the cost to the Government?

Mr. WILLIAMS. It will have a tremendous impact if it goes into effect. It will increase the Government's total bill by some $70 million.

Mr. EVINS. It will wipe out your $85 million savings then?

Mr. KNOTT. Yes, partially.

Mr. EVINS. Do you propose to go before the Federal Communications Commission and protest this proposed rate increase?

Mr. WILLIAMS. We do, sir.

Mr. EVINS. Are you representing the Government's interest?

Mr. KNOTT. Defense and GSA are representing the Government interest as a user of this service.

Mr. WILLIAMS. That is right, sir.

Mr. KNOTT. This is Government-wide. About $25 million of that is GSA.

LOCAL AND LONG-DISTANCE TELEPHONE COST

Mr. JONAS. May I get one thing clear here?

We are talking now about long-distance service and not local. Do you have any way of estimating the Government's local service cost?

Mr. JOHNSON. Yes; I gave you the local Government service cost in 1967 as $35 million.

Mr. JONAS. The total bill would be in the amount of some $135 or $140 million.

Mr. JOHNSON. No, sir. Let me give you the total for 1967. My total in 1967, which is an actual year, was $82.5 million compared to the $102 mililon for voice and record we have been talking about for 1969.

Mr. JONAS. Do you pay for the local service?

Mr. JOHNSON. Yes, sir; we have $35 million as local service in fiscal year 1967.

Mr. JONAS. So then, the $102 million would be the total.

Mr. JOHNSON. Yes, sir.

CONTROL OF USAGE

Mr. JONAS. Who is making an effort to hold down telephone conversations, the Bureau of the Budget? It seems to me that 36 million, or the 56 million calls a year sounds like an awful lot of conversation on the telephone. We ought to patronize some of the Post Office Department a little bit. They need some business. They charge only 6 cents.

Mr. KNOTT. At the request of a member of one of the subcommittees of the Appropriations Committee, the GAO made a study of the feasibility of installing controls and concluded that the cost of mechanical controls on phone calls would far exceed the savings that could be realized, in their judgment, from the use of those controls.

All we can do is to impose controls at the agency level and we work with them in any way we can. There is no question about it that they will vary in different agencies.

Mr. EVINS. They issue directives which say write a letter whenever possible, only use the telephone in case of an emergency.

Mr. KNOTT. That is right. There are others that use the telephone freely.

Mr. EVINS. Some comply with it and some do not. GSA has no control over them. It is up to the individual agencies.

Mr. KNOTT. We have to audit our own usage from time to time. If we find on a quarterly basis we have an increase, we go back to our people with instructions to watch it. We want to be certain that we are getting the best usage out of the telephone.

Mr. JONAS. If you divide 3 into 56 million, how many calls is that for each Government employee? You will find that is an amazing number.

Mr. JOHNSON. It is a little over 18 calls per year.

Mr. JONAS. Eighteen calls per year, per employee.

Mr. JOHNSON. I have had quite a discussion on telephone calls with the Assistant Secretary for Administration at the Treasury Department. They have gone into a program in the Internal Revenue Service where they have proved from a cost standpoint that it is cheaper for them to make a telephone call to the taxpayer to make sure he is there before they send a man out to see him, or in other instances to try to carry on certain correspondence by letter. They found it is cheaper to give him a call.

Now, their call volume has gone up sizably and he has taken steps to try to control it, just the way the Administrator said a moment ago here. They have used it quite frequently.

Mr. KNOTT. It is very interesting, for example, the Veterans' Administration will tell you—if they have not been here to tell you already—that they have been able to, in their judgment, save lives by being able to get, by telephone, the consent of the next of kin for a vital emergency operation.

ADDITIONAL POSITIONS

Mr. EVINS. Well, you have to use the telephone. You cannot discount that.

Mr. Williams, you are asking for an increase of 10 jobs in the com-

munications service. All your other jobs are remaining at the same level.

In transportation you have 176; motor vehicle management, 30; public utilities, seven; and service direction, 39. But you are asking for more in the communications services.

Why do you have this increase in appropriation, and why these 10 additional jobs?

Mr. WILLIAMS. This increase, Mr. Chairman, of $482,000 is modest, but mandatory.

Mr. EVINS. Does it cover the Pay Act increase?

Mr. WILLIAMS. It will cover six things.

First of all, is the Pay Act. I cannot avoid that.

Mr. EVINS. Can't you absorb it?

Mr. WILLIAMS. We are absorbing some but the Pay Act will amount to $73,800 of the $482,000.

Seven thousand, three hundred dollars for the Pay Act in the Voice program.

The record program is $9,100 under the Pay Act.

Mr. EVINS. What page is that?

Mr. WILLIAMS. It is not broken down in the budget. I am using a special sheet here, which is a consolidation.

The total increase in the budget for the Pay Act is $73,800 for all these services.

Mr. EVINS. $73,800 is the Pay Act increase for all services?

Mr. WILLIAMS. Yes, sir.

FREIGHT CONSOLIDATION

Mr. EVINS. Workload increase in communications is $41,500. Transportation, you have $25,000; what is this?

Mr. WILLIAMS. The $25,000 is the money which we will need to get a good start on the freight consolidation, which is a very fertile field and promises to save millions if we can grasp the thing.

However, we feel we must start the project in 1969. Shipments, if they are consolidated, will go in carload lots rather than in less than carload lots, and the rate is much cheaper.

Mr. EVINS. Well, we thought you had consolidated your functions and had been doing this for some time. This was one of the reasons for the creation of the unit.

Mr. WILLIAMS. This is a further step, sir, and this $25,000 is highly recommended or, rather, this project is highly recommended by the GAO. They feel that the savings are potentially tremendous.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages II–79 through 85.
(The pages follow:)

SUMMARY OF NEW OBLIGATIONAL AUTHORITY AND RELATED AVERAGE EMPLOYMENT

	New obligational authority		Average employment					
			Total		Central office		Field	
	1968	1969	1968	1969	1968	1969	1968	1969
OPERATING EXPENSES, TCS								
1. Transportation services	$2,355,900	$2,411,400	176.6	176.6	67.9	67.9	108.7	108.7
2. Communication services	1,846,800	2,251,800	125.4	135.4	100.4	105.4	25.0	30.0
3. Motor vehicle management	415,400	419,800	30.8	30.8	11.6	11.6	19.2	19.2
4. Public utilities services	125,200	127,200	7.9	7.9	7.9	7.9	----	----
5. Service direction	640,700	649,100	39.3	39.3	19.3	19.3	20.0	20.0
6. Administrative operations	644,000	650,700	----	----	----	----	----	----
Total NOA and employment funded by NOA	6,028,000	6,510,000	380.0	390.0	207.1	212.1	172.9	177.9

Summary reconciliation of 1969 estimate to amounts for 1968

1968 Appropriation in annual act	$5,880,000
Proposed supplemental for pay act increases	148,000
Total for 1968	6,028,000
Increases in 1969	
Net additional cost of 1967 pay act	+73,800
Workload increases in communications	+41,500
Service improvement, efficiency and economy studies in:	
Transportation	+25,000
Communications	+341,700
1969 Estimate	6,510,000

ANALYSIS BY ACTIVITIES

	1968	Increases	1969 estimate
1. Transportation services	$2,355,900	$55,500	$2,411,400
2. Communication services	1,846,800	405,000	2,251,800
3. Motor vehicle management	415,400	4,400	419,800
4. Public utilities services	125,200	2,000	127,200
5. Service direction	640,700	8,400	649,100
6. Administrative operations	644,000	6,700	650,700
Total	6,028,000	482,000	6,510,000

	Amount
1968 Appropriation	$5,880,000
Pay Act	+148,000
1968 Adjusted	6,028,000
Change	+482,000
1969 Estimate	6,510,000

GENERAL STATEMENT

"This appropriation provides for improving management of transportation, communication, and public utility services in all civilian agencies, and for providing specialized services to civilian agencies in each of these fields." (From The Budget for 1969.)

The estimate for 1969 is $6,510,000 as compared to financing of $6,028,000 for 1968. Four service improvement, efficiency, and economy studies are provided for at a total cost of $366,700, $41,500 for workload increases in communications, and $73,800 for net additional costs of 1967 pay act.

This estimate includes $250,000 for total pay costs as a result of the Postal Revenue and Federal Salary Act of 1967.

Regulatory representation appearances are expected to be maintained at about the same level as in 1967 and 1968. The representation function consists of (1) negotiations with carriers and utility companies by GSA officials representing the Government as the consumer, and (2) participation in regulatory proceedings. New rate proposals are discussed with the carriers before they become effective. It is anticipated that this procedure will minimize the number of rate proceedings in which GSA will participate during this year on behalf of the Government as a user.

APPROPRIATION LANGUAGE

"For necessary expenses of transportation, communications, and other public utilities management and related activities, as provided by law, including services as authorized by 5 U.S.C. 3109, [$5,880,000] *$6,510,000.*"

1. TRANSPORTATION SERVICES

	Amount	Average employment		
		Central office	Field	Total
1968	$2,355,900	67.9	108.7	176.6
Change	+55,500			
1969	2,411,400	67.9	108.7	176.6

HIGHLIGHT

"Guides and procedures and educational programs for improving transportation practices and operations in civilian agencies are developed; reasonable rates are negotiated with carriers; and procurement assistance, rates, routing, and related services are supplied to executive agencies. The estimated workload in 1969 provides for increases in traffic services ranging from a 2 percent increase in information services to one of 13 percent in contracts awarded." (From The Budget for 1969.)

Transportation services are performed under two subactivities. These subactivities, together with related dollar costs and average employment, are as follows:

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
(a) Traffic services	$1,632,956	143.3	$1,688,600	141.6	$1,710,400	141.6
(b) Transportation management	655,812	35.4	667,300	35.0	701,000	35.0
Total	2,288,768	178.7	2,355,900	176.6	2,411,400	176.6

JUSTIFICATION

The 1968 staffing level will be maintained in 1969. The increase in cost of $55,500 in 1969 is due to salary increases of $30,500 required by the Federal Salary Act of 1967 and $25,000 for an urgently needed service improvement project on Government-wide freight consolidation.

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
(a) Traffic services, total	$1,632,956	143.3	$1,688,600	141.6	$1,710,400	141.6

This activity performs the following functions for executive civilian agencies on request: furnishes rates and routes; negotiates adjustment of rates, classification ratings, transit privileges, and accessorial charges; issues shipping instructions, Government bills of lading, and related transportation documents, makes contractual arrangements for special movements of highly valuable materials such as gold and silver bullion; arranges customs entry and clearance; and provides technical assistance for settlement of invoices and processing of claims.

In fiscal year 1967 GSA effected tangible savings of $24.4 million through the efforts of this function. These savings resulted principally from negotiations with the carriers for reduced freight rates, economical shipping methods, consolidation of small shipments, and direct deliveries from suppliers to customer agencies. For example, savings of $1 million were realized by negotiating reduced ocean rates for fertilizer shipped from U.S. ports to Vietnam on behalf of the Agency for International Development.

The following summary identifies the type of actions performed by this function as well as comparative levels for 1967, 1968, and 1969.

Type of action	1967	1968	196
1. Contracts awarded	1,399	1,460	1,650
2. Procurement contract assistance	7,173	8,000	8,300
3. Shipments processed	46,323	44,700	46,000
4. L. & D. claims evaluated	5,048	4,200	4,300
5. Information services	239,147	300,000	306,000
6. Negotiations	730	847	880

1. *Contracts awarded.*—GSA assists Federal agencies in securing specialized transportation services, such as movements of subsidiary coin, gold, and silver bullion and electronic equipment, through the competitive contract process.

2. *Procurement contract assistance.*—Transportation advice and assistance pertaining to procurement or disposal of materials is furnished through participation in negotiations and in the preparation of contractual documents.

3. *Shipments processed.*—GSA assists executive agencies in worldwide movement of supplies and equipment by selecting the most advantageous routes; issuing shipping instructions and GBL's; processing custom documents; arranging for import permits and export licenses; tracing and expediting shipments; and establishing average weight and demurrage agreements.

4. *Loss and damage (L&D) claims evaluated.*—Technical assistance is provided Government agencies in the investigation, evaluation, and filing of transportation claims.

5. *Information services.*—GSA maintains a centrally located library with more than 100,000 tariffs and traffic publications for use by civilian agencies. In addition, transportation information is furnished these agencies in such matters as supplying advantageous rates and routes, providing international consular and customs requirements, tracing delayed or lost shipments, and negotiating with foreign governments for release of cargo.

6. *Negotiations.*—Proposals for changes in rates, classifications, charges, and shipment practices which are made on behalf of civilian agencies are negotiated with the carriers.

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
b. Transportation management, total	$655,812	35.4	$667,300	35.0	$701,000	35.0

This function provides civilian agencies with management assistance for both freight transportation and passenger travel. Specifically, transportation areas having a potential for cost reduction and improvement are identified; individual transportation problems are solved; and traffic management services are provided to agencies adequate traffic management capabilities.

In addition, economic studies and analyses are made of traffic flow patterns, tonnage, transportation costs, and common carrier operations. The purpose of

these studies and analyses are to determine areas that may require cost adjustments or improvements in service.

In fiscal year 1967, 183 seminars designed to increase knowledge and proficiency in modern traffic management techniques were held for the benefit of 2,800 personnel engaged in this activity in Federal agencies. These seminars will be continued in 1969.

GSA provides policy guidance and direction to civil agencies through publication of Federal Procurement Regulations and Federal Property Management Regulations. The purpose of these regulations is to standardize Government transportation practices and methods. Also, instructional materials in the form of handbooks, guides, and pamphlets are provided these agencies in order to improve and reduce the cost of transportation activities.

Service improvement study: Government-wide freight consolidation.—This estimate contains $25,000 for contractual services for the purpose of conducting a study on Government-wide freight consolidation, This study will be conducted in cooperation with DOD and GAO to determine the feasibility of consolidating small Government freight shipments, at strategic locations throughout the country, into carload or truckload shipments for redistribution to consignees.

Among the problems to be studied are: (a) whether all, or any portion of the consolidation, warehousing, and distribution should be done by the Government, and (b) determination of revised funding methods to take the place of individual agency transportation allotment paying and allocating procedures.

EXPLANATION OF DISTRIBUTION BY OBJECTS

11 Personnel Compensation and Staffing.—$1,941,300 for 181 positions distributed as follows:

	1967			1968			1969		
	Central office	Field	Total	Central office	Field	Total	Central office	Field	Total
(a) Traffic services	49	96	145	49	96	145	49	96	145
(b) Transportation management	20	16	36	20	16	36	20	16	36
Total positions	69	112	181	69	112	181	69	112	181
Average employment	68.9	109.8	178.7	67.9	108.7	176.6	67.9	108.7	176.6

12 *Personnel benefits, $147,100.*—Includes $126,200 for retirement contributions, $13,800 for health benefits, and $7,100 for group insurance, as required by law in support of the above employment.

21 *Travel and transportation of persons, $18,200.*—$15,700 for approximately 581 days' travel which includes $12,700 for transportation management activities in the regional offices for the purpose of agency liaison, seminars, and training programs, and $3,000 for three divisions in the central office; $2,500 for motor pool services in the 10 regional offices.

22 *Transportation of things, $300.*—Provides for shipping standard forms.

23 *Rents, utilities, and communication services, $92,400.*—$21,000 for payments to GSF for depreciation of administrative equipment and $71,400 for telephone and teletype service costs for 181 employees in the central office and 10 regional offices.

24 *Printing and reproduction, $19,000.*—Charges for central office and regional printing of regulations, instructions, procedural issuances and related forms, exhibits and attachments, reports, briefs, et cetera.

25 *Other services, $176,100.*—Provides $115,000 for special program oriented data processing service, $25,000 for the service improvement study, and the remainder of $36,100 is for services such as tariff watch services, payments to GSF for repair and maintenance of machines not under commercial contracts, share of GSA's relocation cost, and payments to Government agencies, which includes health room services, and security clearances.

26 *Supplies and materials, $17,000.*—$7,300 for office supplies for 181 employees at the rate of approximately $40 per employee; $8,100 for transportation tariffs and technical publications; $200 library costs, and $1,400 for transcripts of hearings.

APPEARANCES BEFORE STATE OR REGULATORY AGENCIES

Mr. EVINS. What have been your accomplishments in appearing before the State or Federal regulatory agencies?

Mr. CONRAD. In 1967 we intervened in nine cases and closed six. We had 11 cases pending in transportation at the end of the year.

Mr. EVINS. Eleven cases were pending?

Mr. WILLIAMS. Yes, sir.

Mr. EVINS. What was the nature of these cases and what was accomplished by the nine interventions?

Mr. WILLIAMS. In the cases in which we intervened, some came about as a result of rate increases which were proposed and some dealt with operating rights of those from whom we obtain service.

If we feel we can show that a proposed increase is not justified, we make an attempt to do so and either hold the rates where they were or get some reduction in them over what is being proposed. This is the general nature in rate cases.

Mr. EVINS. We know of the general nature, but tell us of a specific case.

TELPAK CASE

Mr. CONRAD. Most of these cases, Mr. Chairman, are still pending.

One specific case, of course, is the Telpak case, about which you inquired earlier, which is pending before the Federal Communications Commission.

Mr. EVINS. That is the big one, the general rate increase.

CALIFORNIA PUBLIC UTILITIES COMMISSION

Mr. CONRAD. We also are appearing before the California Public Utilities Commission in connection with a proceeding they have out there for a rate increase.

Mr. EVINS. What happened?

Mr. CONRAD. Actually, that case is still pending. In another case, however, the reduction in the total rate increase requested was distributed throughout all of the users, both private and Government.

TRANSPORTATION CASES

We have intervened in transportation cases also in rulemaking proceedings and also in connection with the extension of operating authority, where operating authority was lacking.

Mr. EVINS. What do you do, write a letter to the ICC and say: Allow truck line A, who has filed to extend his coverage?

Mr. CONRAD. Yes, sir. But there is more to it than that. One particular example involved a truck line which lacked authority to haul firefighting supplies from a supply source in its operating territory into another operating territory in that area, and the existing carrier did not have operating authority in the territory in which the supply source was located.

Mr. EVINS. Do you represent the Defense Department in this area of transportation?

Mr. CONRAD. We represent the entire Government including DOD, and in many instances if it has the major interest we delegate cases

to the Department of Defense, and they handle them for civilian agencies, sometimes as cocounsel.

Mr. EVINS. Well, truck line A wanted to haul these armaments and they did not have a franchise.

Mr. CONRAD. This was a matter we handled for the Forest Service at their request.

Mr. KNOTT. But in this case it would be an initiated proceeding to meet a service requirement of the Government, not an intervention in a rate case.

Mr. EVINS. It is always good to have a friend in the court, and the GSA is a friend in the court for all the Government agencies.

Mr. WILLIAMS. I have an example here of five billing reviews which were completed during the first half of fiscal year 1968, which resulted in tangible savings.

Mr. EVINS. Cite them for us.

Mr. WILLIAMS. In Arizona, the Tucson Gas & Electric Co.

Mr. EVINS. Is this in transportation?

Mr. WILLIAMS. I am talking about public utilities, another area of our representation work.

Mr. EVINS. That is another section. We are talking about transportation savings.

Can you show us some savings in transportation?

TRANSPORTATION SAVINGS

Mr. WILLIAMS. Savings in transportation charges effected by GSA for the executive agencies during the fiscal years 1966 and 1967 amounted to $31 million in 1966, $24 million in 1967.

They involve about the same number of agencies as reported to us, and by us to this committee, last year.

Mr. EVINS. The agencies reported these savings to them, and they, in turn, reported them to you as a result of your intervention for them.

Mr. WILLIAMS. That is correct, sir, intervention and other assistance.

Mr. EVINS. We will place that in the record at this point.

(The information follows:)

SAVINGS IN TRANSPORTATION CHARGES EFFECTED BY GSA FOR EXECUTIVE AGENCIES DURING FISCAL YEARS 1966 AND 1967

	1966	1967
Agency for International Development	484,745	1,144,286
Agriculture, Department of	217,569	53,643
Forest Service		2,028
Soil Conservation		106
Atomic Energy Commission	253	321
Civil Service Commission	253	2,877
Commerce, Department of	4,156	4,340
Defense, Department of	465,331	441,152
Federal Aviation Agency	65,798	32,222
Federal Home Loan Bank Board	743	
General Services Administration:		
Federal Supply Service	7,790,382	7,259,205
National Archives and Records Service	5,319	98,595
Office of Assistant Administrator for Finance and Administration	56,057	4,225
Property Management and Disposal Service	501,223	2,205,493
Public Buildings Service	40,591	4,461
Health, Education, and Welfare, Department of	38,164	
Civil Defense	27,903	14,690
Food and Drug Administration		1,609
Public Health Service	33,802	7,938
Social Security	2,838	67,424
Housing and Urban Development, Department of	3,591	7,363
Interior, Department of the		235
Alaska Railroad	29,827	33,872
Bonneville Power Administration		791
Bureau of Indian Affairs	70,198	63,129
Bureau of Reclamation	147,600	
Geological Survey		1,451
National Park Service	5,628	691
Trust Territories	33,925	9,916
Justice, Department of		12,894
Bureau of Prisons	20,206	839
Federal Bureau of Investigation	192	230
Labor, Department of		3,768
Job Corps		437
National Aeronautics and Space Administration	1,819	3,209
Office of Economic Opportunity	382	480
Office of Emergency Planning		1,918
Panama Canal Company	2,342	5,729
Post Office Department	1,652,051	1,128,893
Small Business Administration		4,078
State, Department of		1,273
Transportation, Department of		208
Coast Guard	6,950	286
Treasury, Department of the:		
Bureau of Customs	549	10,646
Bureau of Engraving and Printing	1,950	
Bureau of the Mint	19,681,560	11,319,568
Internal Revenue Service	7,324	23,721
National Banking System		140
U.S. Secret Service		428
Office of the U.S. Attorney		469
U.S. District Court	248	
U.S. Information Agency		1,200
Veterans' Administration	173,268	231,055
Various	367,994	216,954
Total	31,942,731	24,430,486

Note: The individual agency savings listed above resulted from the application of improved traffic management policies and techniques. For example, significant economies were effected through rate negotiations, consolidation of small-lot shipments, and direct deliveries to consuming agencies from suppliers, rather than from Government warehouses or storage locations.

PUBLIC UTILITY SAVINGS

Mr. EVINS. Tell us about the utility savings.

Mr. WILLIAMS. With respect to the public utilities, in the first half of fiscal year 1968 a rate and billing review of the Tucson, Ariz., Gas & Electric Co., produced a savings of $90,000 on an annually recurring basis.

In Illinois, the Menard Electric Cooperative, we had $557 savings.

With the Massachusetts Electric Co., we had an estimated savings of $300.

Mr. EVINS. Who did the Massachusetts Electric Co. bill, and what did you do, specifically, to protect the Government interest?

Mr. WILLIAMS. I cannot tell you that. I will have to provide that for the record.

(The information requested follows:)

The Massachusetts Electric Co. in fiscal year 1966 billed the Massachusetts National Guard at Worcester $5,019 under its C–12 rate schedule. An analysis of the load factor and energy used indicated that the rate G category should be applied to a load of this magnitude. Accordingly, the billing was changed from the C–12 rate to the G–12 rate resulting in estimated annually recurring savings of $300.

PUBLIC UTILITIES SAVINGS FOR VA HOSPITAL

Mr. EVINS. Was this before the Massachusetts Public Service Commission?

Mr. CONRAD. No, sir. This had to do with a 5-year contract which we negotiated for the VA hospital at West Roxbury with the Boston Gas Co., and we eliminated, through negotiation, a nonrecurring connection charge of $31,900, which was initially requested by the gas company for this gas service. Instead of paying the $31,900 for the connection charge, we agreed to amortize it over a 5-year period and treat it as a termination liability.

Mr. EVINS. How much was it?

Mr. CONRAD. $31,900.

Mr. EVINS Where is the savings?

Mr. CONRAD. Instead of paying $31,900 in cash for the connection charge, we persuaded the company to put the $31,900 on a 5-year amortized basis, so that at the end of the 5 years the liability would be extinguished.

Mr. EVINS. You did it over 5 years?

Mr. CONRAD. We worked out a different arrangement so, in the unlikely event we would discontinue the service within the period of the contract, we would pay them for the unamortized portion of it.

Mr. EVINS. You are not likely to discontinue it.

Mr. CONRAD. That is correct, so rather than paying $31,900 in cash, the company agreed we would not pay it, but if we terminated the service earlier we would pay the unamortized part of it.

Mr. BOLAND. It was amortized over what period of time?

Mr. CONRAD. Five years.

Mr. BOLAND. And it was washed out.

Mr. CONRAD. Yes.

Mr. JONAS. It was $31,900 you said you had as a savings. I thought you said something about $300 or $400 a moment ago in one place.

Mr. WILLIAMS. He is referring to something else.

Mr. EVINS. Give us another example.

MASSACHUSETTS ELECTRIC CO.

Mr. JONAS. Cite that $300 one.

Mr. WILLIAMS. In Massachusetts, the Massachusetts Electric Co. was $300.

Mr. JONAS. How many man-hours did you put in on saving that $300?

Mr. WILLIAMS. Oh, not too long.

Mr. JONAS. You probably came out about even.

Mr. CONRAD. Sir, we conduct a cyclic billing review of all major utility billings which are made to the Federal Government in order to determine whether or not the utility is applying its lowest rate or tariff for that volume of usage at that installation.

In this particular instance, we did find that there would be a reduction of $300 if the company billed us under one schedule than under another.

Now, this varies from the $300 up to some rather good-sized figures on an anually recurring basis. These are monthly charges.

TUCSON GAS & ELECTRIC CO.—SERVICES TO AIR FORCE BASE

Mr. EVINS. Give us another example.

Mr. WILLIAMS. Another example, I think, and a good one, is in Arizona, the Tucson Gas & Electric Co. I mentioned, of $90,000.

Mr. EVINS. You made a $90,000 saving?

Mr. WILIAMS. Yes, sir; and this came about in the course of our review of the electric rate applications for larger Government installations.

In this connection, it was noticed that Davis-Monthan Air Force Base was being billed by Tucson Gas & Electric Co. on its rate 13, but that rate 14 would be more advantageous if the Air Force would sign a long-term contract.

After GSA established this fact, the Air Force did execute such a contract, with an estimated resulting savings of $90,600 a year to the Government.

Mr. EVINS. Was it the GSA that located it?

Mr. WILLIAMS. It was GSA.

Mr. EVINS. You are reviewing the rate structures.

Mr. WILLIAMS. Yes, sir; we are reviewing the rate structures and also this is part of the billing review we do. Where we find savings are possible, we go after them.

BUREAU OF MINES CONTRACT WITH MINNESOTA POWER CO.

Mr. EVINS. Give us one more of your examples.

Mr. WILLIAMS. The Bureau of Mines, the Iron Range Demonstration plant in Watkins, Minn.; GSA assisted the Bureau of Mines in negotiating a contract with the Minnesota Power & Light Co. for electric service to the Iron Range Demonstration plant.

Joint efforts by the two agencies resulted in estimated annual savings of $60,400 plus an estimated nonrecurring savings of $87,600 due to the elimination of special facility charges initially requested by the power company.

Mr. EVINS. You told them not to sign a contract with these add-ons and special charges?

Mr. WILLIAMS. Yes, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. You certainly need to keep an eye on the private utili-

ties and the gas companies. They are a monopoly by nature, and I am suspicious of a lot of their operations.

We will put the communication services, motor vehicle management, and public utilities services in the record at this point.

(Documents follow:)

2. Communication Services

	Amount	Average employment		
		Central office	Field	Total
1968	$1,846,800	100.4	25.0	125.4
Change	+405,000	+5.0	+5.0	+10.0
1969	2,251,800	105.4	30.0	135.4

HIGHLIGHT

Networks are designed and engineered for a Federal communications system for general and national defense use, compatible with the National Communications System. Studies of equipment utilization, services rates, and economic factors are made, contracts negotiated, and management and control of operations are provided. The projected program for 1969 provides for the management of the Federal Telecommunications System financed through the FT fund whose sales volume will increase from $100.4 million in 1968 to an estimated $107.3 million in 1969, and for increasing emphasis on the management of Government-wide communications. (From the budget for 1969.)

Communication services are performed under four subactivities as follows:

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
a. Voice programs	$767,396	$803,100	$875,000
b. Record programs	705,102	737,100	1,064,800
c. Special programs	209,104	216,800	220,600
d. Circuit management	85,903	89,800	91,400
Total cost or estimate	1,767,505	1,846,800	2,251,800

JUSTIFICATION

Sixteen additional positions are requested for 1969. Increased emphasis in providing management and technical assistance to civilian agencies under the GSA "Government-wide management" responsibilities requires eight positions. In addition the initiation of three system improvement studies will require eight positions together with contractual services of subject matter specialists outside of GSA. Full explanation of each of these three studies is contained in ensuing paragraphs.

The additional effort in management and technical assistance to civilian agencies is planned to further the basic GSA Government-wide communications management responsibility consistent with the Federal Property and Administrative Services Act. The additional staffing of eight positions for "Government-wide management" requested in 1969, all to be located in the regional offices, will permit greater response to increasing requests from agencies for technical assistance such as training of agency personnel to conduct communications studies in their own agencies. Review and analysis (including onsite surveys) of agencies communications facilities in both field and departmental locations will be increased to assure their application of communications procurement and management regulations, and improved management and operational practices to effect increased Government-wide economies. At the central office level this increased emphasis will be met through increased productivity of current staff resources.

Existing staff resources will also absorb the increased workloads attributable to increased traffic, the continued improvement of the planning, engineering, and management of the Federal Telecommunications System (FTS) voice and record services, incorporation of service improvements, and new equipment and cost reduction techniques.

A. VOICE PROGRAMS

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
Total	$767,396	51.4	$803,100	52.2	$875,000	54.2

The objective of the voice programs continues to be to obtain maximum efficiency and economy by the Federal agencies in the planning, development, and utilization of telephone and other specialized voice facilities and to provide efficient and economical voice communications on a local and nationwide basis for both day-to-day and emergency service through the FTS.

The request for 1969 will provide for:

(1) *Management and technical assistance—Government-wide.*—An increase of three positions is essential to enlarge the scope of this program. One measure of the effectiveness of the program is the result of GSA reduction in costs of agencies' telephone station equipment and improved utilization of telephone services and facilities. This effort has produced annually recurring savings in excess of $1,300,000 since fiscal year 1966 through the elimination of unnecessary telephone equipment such as speakers, buzzers, and extra instruments.

Increased emphasis will also be placed on management and technical guidance provided to the civilian agencies in the (*a*) development and planning of specialized voice communications programs and requirements; (*b*) application of Government-wide procurement and management policies and regulations; and (*c*) resolution of communications problems to increase efficiency and reduce cost. Concentrated attention at the field level is of particular importance.

(2) *Federal Telecommunications System—Engineering and Management.*—

(*a*) *Intercity voice network.*—Engineering modification and refinement of the system are required on a continuing basis to incorporate technological advances in the communications field and thus maintain system efficiency and economy. Through the FTS, agencies are currently experiencing a reduction of over 60 percent in the average unit cost of long-distance telephone calls versus commercial toll costs for equivalent service. In 1969, it is estimated that approximately 180 new intercity connection studies will be made to serve increased Federal programs and to effect service improvement, potential cost reductions, and improved network survivability.

(*b*) *Telephone switchboards and local service.*—In 1969, 160 studies will be performed for the modification, expansion, and consolidation of existing telephone switchboards to provide improved efficiency, reliability, and economy and to keep pace with changing agencies' requirements. In 1969 we anticipate 465 telephone switchboards will be under GSA management.

The following urgently needed system improvement project applies to the voice portion of the communications function and will require two full-time positions to develop the program and evaluate the output. It will also involve the leasing of computer time and contract assistance of analysts for the more advanced phases. Cost in 1969 would be $57,700.

Simulation systems engineering

This project is to develop simulation programs for computer application to evaluate proposals for a continual upgrading of the design and operation of the Federal telecommunications system in order to provide improved service for every communications dollar expended. This approach permits a study of a variety of communications network problems which cannot be readily examined by any other techniques because of the complexity of operations and the number of variables involved. The use of simulation methods as management tools permits the examination and testing of all features of the networks which influence performance and cost and identifies the best combination of variables in developing a solution to the problem. This analytical capability will also help

identify, in advance of installation, the most efficient and economical communications circuit patterns, as well as assuring adequate performance of the system under degraded or emergency conditions.

B. RECORD PROGRAMS

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employmen
Total	$705,102	48.5	$737,100	49.2	$1,064,800	57.

Specialized communications management staff, together with engineering and technical expertise, is required to provide guidance and assistance to the Federal agencies in the planning, development, and utilization of teletype, data, and other specialized record communications services, and to make maximum utilization of the advanced record system (ARS) of the FTS for requirements which can be more efficiently or economically served than by separate systems of individual agencies.

The request for 1969 will provide for:

(1) *Management and technical assistance—Government-wide.*—This program of management and technical guidance to be provided to the civilian agencies at the regional level in fiscal year 1969 involves five additional positions for the (a) development and planning of specialized record and data communications programs and requirements, (b) application of Government-wide procurement and managment policies and regulations, and (c) resolution of communications problems to increase efficiency and reduce costs. The provision of engineering and technical assistance to agencies in their record communications programs assumes evergrowing importance with the dynamic technological advances in the relatively new field of data and computer communications and the rapidly increasing requirements of agencies. The requested positions are essential to develop a basic capability for the vital review and technical assistance required by agencies at their widely dispersed field operating installations.

(2) *Management and engineering support of the ARS and data service.*—The advanced record system is scheduled to serve approximately 1,650 station locations with 2,000 access lines in fiscal year 1969. This is a 52 percent increase in the number of stations served since its first full-year of operation in fiscal year 1967. Close engineering and management attention to the expansion and refinement of the system will be required. Data transmission service is expected to increase by more than 75 percent over the 1967 level, reaching an estimated traffic volume equivalent to more than 858 million line words, primarily to accommodate the requirements of the Social Security Administration, the Veterans' Administration and the Federal Supply Service.

Essential improvement projects relating to the records program will require funding in the total amount of $284,000 as follows:

1. *Upgraded computer program system for the ARS.*—This project provides for design and development of an upgraded computer program for the advanced record system. This program system will execute current functions and will provide the framework for the orderly addition of the new requirements of subscribers during calendar years 1969–70. From February 17, 1966, the advanced record system has been implemented in successive phases and with each phase has come differing requirements for each additional subscribing agency. The differing requirements have forced us to use valuable program capacity which is now in danger of being exceeded. Therefore, a new design of the existing computer program is required to extend the life of the present system at minimum cost and to meet foreseeable communications requirements dictated by agencies and the National Communications System through 1970.

The project will require an additional program analyst position to administer the contract. Cost in 1969 would be $100,000 and the project would be scheduled for completion in 1970.

2. *Improved record and data communications system.*—Due to rapid changes in record and data communications system requirements, the design and development of a system to meet Government management needs during the 1971–75 period must begin promptly if present Government capability is to avoid operational and technological obsolescence. For example, the capability to switch

cryptographically secure traffic now appears necessary and the need for greater capacity to handle existing kinds of message service will definitely be required. The present Government system required almost 4 years from the initial study to cutover and over 2 years from date of award to implementation. Therefore, it is essential it begin in 1969.

This project will require five additional electronic engineering positions. Contracts to develop and document detailed specifications will be required after initial specifications have been completed by GSA. Cost for 1969 would amount to $184,000.

C. SPECIAL PROGRAMS

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
Total	$209,104	17.1	$216,800	17.2	$220,600	17.2

No increase in staffing is projected for this subactivity; however, continued refinement, updating, and maintenance of emergency plans to serve all Federal civil agencies will be required. Representation and technical support to the NCS will continue to be provided by GSA as a member of the NCS management group. Increased activity will be experienced in COMSEC support to civil agencies.

(1) *National communications system.*—Full time representation will continue to be provided at NCS during 1969 for participation in the planning, modification, and refinement of the National Communications System. As a member of the NCS management group, GSA also provides technical support in specialized task group activities.

(2) *Emergency security program.*—Assistance is provided agencies in the development, refinement, and updating of their emergency security requirements, including provision of FTS service and security equipment to agency relocation sites in accordance with OEP and NASA directives. Full-time representation is maintained at OEP for the purpose of coordinating the requirements of the civil agencies.

(3) *COMSEC equipment support.*—The growing requirement of the civil agencies involving 248 more items of communications security equipment will require support from GSA in 1969, an increase of 60 percent over the 1967 level.

D. CIRCUIT MANAGEMENT

	1967		1968		1969	
	Amount	Average employment	Amount	Average employment	Amount	Average employment
Total	$85,903	6.7	$89,800	6.8	$91,400	6.8

No increase in staffing is requested for 1969.

Workloads associated with the centralized management and procurement of the leased intercity circuit requirements of the civilian agencies to take advantage of bulk tariff rates are expected to increase due to some expansion of the FTS, changes in the exclusive circuit requirements of agencies, and changes in tariff offerings. An increasing number of circuits will be shared with State, municipal, and other non-Federal activities under individual agreements where it is economically advantageous to the Federal Government.

This program involves:

(1) Management in 1969 of an estimated 21,000 intercity circuits of the FTS and individual Federal civil agencies and non-Federal governmental entities, an increase of approximately 22 percent over the 1967 level.

(2) Periodic review of associated equipment and circuitry with reduction of costs of using agencies resulting from improved circuit routing and Telpak configuration.

(3) Continued cooperation and coordination with the DOD in the joint circuit procurement activity to take maximum advantage of bulk rate economies for the Federal Government as a whole.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.—$1,761,000* for 150 positions distributed as follows:

	1967	1968	1969
a. Voice programs	54	56	61
b. Record programs	51	53	64
c. Special programs	18	18	18
d. Circuit management	7	7	7
Total positions	130	134	150
Average employment	123.7	125.4	135.4

12 *Personnel benefits.*—$135,600 includes $114,500 for retirement contributions, $12,900 for health benefits, and $8,200 for group insurance, as required by law in support of the above employment.

21 *Travel and transportation of persons.*—$46,200 includes $45,600 for approximately 1,689 days travel which includes approximately $3,000 for the semiannual inventory of classified equipment as recommended by the National Security Agency, $20,000 for the 10 regional offices for review of agency requirements in connection with the voice and record programs, and an estimated $22,600 for travel of central office personnel. Motor pool travel is $600.

22 *Transportation of things.*—$600 includes shipping standard forms and movement of household goods as allowed by law in the hiring of engineers.

23 *Rents, utilities, and communication services.*—$9,200 for payment to GSF for depreciation of administrative equipment and $50,700 for telephone and teletype requirements.

24 *Printing and reproduction.*—$5,000 for issuance and/or updating of GSA handbooks, orders, forms, and other instructional material for the central office and 10 regional offices.

25 *Other services.*—$236,400 includes $214,200 for payments for system improvement studies, $11,000 payments to WCF, $3,200 to FTF, $3,000 to other Government agencies, $5,000 for other miscellaneous services.

26 *Supplies and materials.*—$7,100 general office supplies computed at the rate of approximately $40 per employee for 150 positions, $6,000; technical publications and trade journals, $1,100.

3. Motor Vehicle Management

	Amount	Average employment		
		Central office	Field	Total
1968	$415,400	11.6	19.2	30.8
Change	+4,400			
1969	419,800	11.6	19.2	30.8

HIGHLIGHT

"Government-wide policies and procedures are developed to improve the overall efficiency of the operation of the Government-owned motor vehicle fleet, and to assist the various Federal agencies with motor equipment management. The program for 1969 contemplates 20 additional motor equipment studies of agencies' managerial and operational policies. Implementation of the recommendations of such studies have to date reduced equipment investment by about $3.1 million and operating costs by $4.9 million." (From the budget for 1969.)

JUSTIFICATION

	1967	1968	1969
Total cost or estimate	$390,415	$415,400	$419,800

No increase in staff is requested for this activity in 1969.

During 1967 the General Services Administration conducted 20 studies of agencies managerial and operational policies pertaining to motor equipment management. This brought to 98 the number of such studies completed. These studies have corrected agencies management deficiencies such as eliminating unneeded positions and reducing overstocked parts. As a result of such studies an annual recurring savings of approximately $389,000 was realized in fiscal year 1967. Cummulative to date, studies of this nature have reduced equipment investment by approximately $3.1 million and operating costs by $4.9 million. Twenty additional studies per year are planned for fiscal years 1968 and 1969.

Through GSA's leadership, further cost reductions have been made by arranging for cross-servicing among agencies for motor vehicle fuel and oil. These savings totaled $484,000 during fiscal year 1967. Emphasis will be placed on expanding such cross-servicing arrangements in 1968 and 1969. In addition, GSA will also place emphasis on arranging for cross-utilization of contruction equipment, cross-servicing at maintenance facilities, and training of heavy duty equipment and automotive mechanics in new engineering features and maintenance requirements of modern equipment.

Continued emphasis will be placed on implementation of sound preventive maintenance programs for Government vehicles. This will not only reduce maintenance costs but will also assist in providing safe operating motor vehicles. Handbooks and guides will be promulgated to provide executive agencies with technical advice and assistance with respect to promoting economy and efficiency in the management and operation of Government vehicles. Also 28 courses per year in defensive driving techniques will be conducted for Government motor vehicle operators in 1968 and 1969.

GSA will continue to sponsor the free interchange of motor vehicle management information between and among the Federal agencies, the automotive industry, and commercial fleet operators. This will be done during the course of 15 sponsored Interagency Motor Equipment Management Committee meetings. These meetings will be of mutual benefit to both industry and Government personnel in solving fleet problems with respect to specifications, utilization, maintenance, operations, and disposal. State safety coordinators will be aided in setting up safety workshops to promote highway safety programs in four States in fiscal years 1968 and 1969.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$355,700 for 32 positions distributed as follows:

	1967	1968	1969
Central office	12.0	12.0	12.0
Field offices	20.0	20.0	20.0
Total positions	32.0	32.0	32.0
Average employment	30.2	30.8	30.8

12 *Personnel benefits.*—$27,400 includes $23,300 for retirement contributions, $2,800 for health benefits, and $1,300 for group insurance as required by law in support of the above employment.

21 *Travel and transportation of persons.*—$14,200 includes $13,100 for approximately 485 days of travel and $1,100 for motor pool travel of the central office and eight regional offices for the purpose of providing management services to motor pools, participation in the updating of driver training programs, conducting studies in Federal agencies motor equipment management activities.

22 *Transportation of things.*—$300 provides for pro rata cost of shipping standard forms.

23 *Rents, utilities, and communication services, $11,800.*—$3,600 for payments to GSF for depreciation of administrative equipment and $8,200 for costs of telephone and teletype services.

24 *Printing and reproduction.*—$6,200 for central and regional office requirements in printing of handbooks, GSA orders, circulars, and regulations for motor pool maintenance and management practices.

25 *Other services.*—$3,000 includes $900 payments to WCF; $900 payments to FTF and $1,200 for other miscellaneous costs.

26 *Supplies and materials.*—$1,200 for routine office supplies in the central and regional offices at the rate of approximately $40 per employee per year.

4. Public Utilities Services

	Amount	Average employment		
		Central office	Field	Total
1968	$125,200	7.9	----------	7.9
Change	+2,000			
1969	127,200	7.9	----------	7.9

HIGHLIGHT

"Negotiations are conducted with public utilities companies on behalf of executive agencies and technical assistance is rendered in connection with regulatory proceedings. In 1969 continued emphasis will be placed on the above areas, where in 1967, savings to the Government of $1,530,812 accrued." (From the budget for 1969.)

JUSTIFICATION

	1967	1968	1969
Total cost or estimate	$118,361	$125,200	$127,200

The Federal Property and Administrative Services Act of 1949, as amended, assigned to GSA the responsibility for prescribing policies and methods governing the procurement and utilization of public utilities by executive agencies. It also assigned to GSA the responsibility for representing such agencies in negotiations with public utility companies and in proceedings involving public utlities before Federal and State regulatory bodies.

In 1967, GSA rendered assistance to 38 Federal departments, agencies, and bureaus. There were 207 major instances wherein assistance was provided in such public utilities functions as procurement, management, utilization, conservation, cost reduction, and negotiations. In negotiations with 10 large public utilities suppliers, involving new or renewal areawide contracts, savings were effected by substituting a master contract for multiple contracts. Federal procurement regulations regarding the procurement of public utility services by Federal agencies were developed and published. Guidance and assistance was provided to the executive agencies relative to the availability of areawide contracts and the procedure for handling capital credits received from REA-financed cooperative agencies.

Also, in 1967, 13 long-term or special-purpose utilities contracts were negotiated in behalf of several Government agencies, where such contracts were necessary to obtain required service, secure lower rates, or eliminate or reduce special facilities charges. These types of assistance to Federal agencies in fiscal year 1967 resulted in direct savings of $1,530,812.

In fiscal years 1968 and 1969, GSA will place primary emphasis on the following activities pertaining to public utilities services: (*a*) development and publication of regulations and procedures governing the procurement and management of public utilities services by Federal agencies; (*b*) presenting seminars and training courses for selected employees of executive agencies for the purpose

of improving public utility procurement and management; (c) providing assistance to Federal agencies in the attainment of economy and efficiency in all phases of public utilities procurement, management, utilization, conservation and cost reduction; (d) conducting negotiations with suppliers for service needs, rates and costs that are advantageous to the Government, including areawide contracts and long-term or special-purpose contracts; (e) reviewing utility bills of Federal agencies to insure that the Government is billed for services under the most economical rate; (f) performing economic analyses of utilities operations (electric, gas, steam, water, and sewerage) in behalf of the Government as a user and consumer.

No increase in staff is requested for this activity in 1969.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$109,000 for eight positions, all in central office:

	1967	1968	1969
Total positions	8.0	8.0	8.0
Average employment	7.8	7.9	7.9

12 *Personnel benefits.*—$8,300: Includes $7,300 for retirement contributions, $500 for health benefits, and $500 for group insurance as required by law in support of the above employment.

21 *Travel.*—$3,300: Includes $3,200 for approximately 118 days of travel for negotiations, training, and representation, and $100 for motor pool services.

23 *Rents, utilities, and communications services.*—$3,600: $800 for payment to GSF for depreciation of administrative equipment and $2,800 to provide for telephone and teletype services.

24 *Printing and reproduction.*—$1,500 for areawide contracts, GSA orders, circulars, and training material.

25 *Other services.*—$800 provides for security clearances, payments to GSF for repair of equipment not under contract, and health-room services; includes $300 payment to WCF.

26 *Supplies and materials.*—$700 provides for routine office supplies and purchase of transcripts of utility hearings.

SERVICE DIRECTION

Mr. EVINS. Now, on service direction, page II–100, you are asking for an $8,400 increase over last year.

You state that general direction over all programs assigned to Transportation and Communications Services is provided by the Commissioner and the Deputy Commissioner, aided by an administrative staff, and in the field by a regional director in each of the 10 regions. You say the cost of postage fees for all programs of the service is provided for in this activity in the amount of $10,000.

Tell us what you are doing in service direction.

Mr. WILLIAMS. There is no additional manpower being requested in service direction over last year.

These efforts are necessary to supervise all of the operational programs which we have, the operational programs being the communications services, the transportation services, the public utility work, and all of the activities which we conduct must have an overall supervisory effort.

OBJECT CLASSIFICATION BREAKDOWN, DEPARTMENTWIDE

Mr. SHIPLEY. I think it would be helpful if we had an object breakdown total for the whole agency.

Is it in the justification?

Mr. JOHNSON. The whole agency?

Mr. SHIPLEY. Yes.

Mr. JOHNSON. No; it is not.

We will have to provide that. We will have to add it up. We will be glad to provide it.

Mr. SHIPLEY. That is all I have.

(The information follows:)

OBJECT CLASSIFICATION (SUMMARY OF NOA ITEMS)

		Actual, 1967	Program, 1968	Request, 1969
	Personnel compensation:			
	Central office	20,411,694	24,282,100	26,055,400
	Field	48,144,285	50,743,900	52,197,100
11	Total personnel compensation	68,555,979	75,026,000	78,252,500
	Other objects:			
12	Personnel benefits	5,197,860	5,684,600	5,969,300
13	Benefits for former personnel	113,399	60,000	60,000
21	Travel	1,650,641	2,226,200	2,301,800
	Travel (motor pool)	416,741	482,400	503,000
22	Transportation of things	1,135,980	799,900	863,500
23	Rents and utility services	3,696,848	4,424,300	5,058,200
	Communication services	4,260,448	4,623,800	4,888,500
24	Printing and reproduction	2,054,813	2,053,600	2,058,700
25	Other services	360,841,317	395,509,900	384,841,400
26	Supplies and materials	3,175,032	3,218,000	3,233,800
31	Equipment	1,527,480	8,188,600	5,851,600
32	Lands and structures	110,807,728	81,120,754	71,204,000
41	Grants, subsidies, and contributions	1,085,153	1,011,297	1,011,000
42	Insurance claims and indemnities	64,785	35,000	35,000
43	Interest and dividends	1,206,000	1,067,000	1,028,000
92	Undistributed			900,000
	Total other objects	497,234,225	510,505,351	489,807,800
	Total obligations	565,790,204	585,531,351	568,060,300

ADMINISTRATIVE OPERATIONS

Mr. EVINS. Tell us about tab No. 6, "Administrative operations."

Mr. JOHNSON. This is the pro rata share of the fund which follows later in the presentation, the Administrative Operations Fund.

Federal Telecommunications Fund

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimated	1969 estimated
	Program by activities:			
	Operating costs, funded:			
	1. Voice program	74,925	85,050	89,950
	2. Record program	7,538	10,291	11,500
	3. Circuit procurement program	4,282	4,319	5,000
	4. Special programs	354	542	545
	5. Operating results and financial condition	721		
	Total operating costs, funded	87,819	100,202	106,995
	Capital outlay, funded:			
	Acquisition of fixed assets	89	600	700
	Total program costs, funded	87,908	100,802	107,695
	Change in selected resources [1]	−702	−315	−100
10	Total obligations	87,206	100,487	107,595
	Financing:			
	Receipts and reimbursements from:			
	Voice program, revenue	−77,439	−86,066	−90,000
	Record program, revenue	−5,878	−9,330	−11,505
	Circuit procurement program, revenue	−4,459	−4,319	−5,000
	Special programs, revenue	−512	−672	−750
	Undistributed	−24		
	Total receipts and reimbursements	−88,312	−100,387	−107,255
11	Federal funds	(83,200)	(95,062)	(101,705)
13	Trust funds	(4,800)	(5,000)	(5,200)
14	Non-Federal sources	(312)	(325)	(350)
21	Unobligated balance available, start of year	−6,562	−7,667	−7,564
24	Unobligated balance available, end of year	7,667	7,564	7,224
27	Capital transfer to general fund		3	
	New obligational authority			
	Relation of obligations to expenditures:			
10	Total obligations	87,206	100,487	107,595
70	Receipts and other offsets (items 11–17)	−88,312	−100,387	−107,255
71	Obligations affecting expenditures	−1,106	100	340
72	Obligated balance, start of year	2,243	6,364	6,248
74	Obligated balance, end of year	−6,364	−6,248	−2,100
90	Expenditures	−5,227	216	4,488
	Expenditures are distributed as follows:			
02	Out of prior authorizations	−5,227	216	4,488

[1] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Supplies, deferred charges, etc	1,349	647	450	350
Unpaid undelivered orders	114	116		
Advances	4	2		
Total selected resources	1,467	765	450	350

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	8,188	9,127	9,687
11.3	Positions other than permanent	417	310	320
11.5	Other personnel compensation	130	159	159
	Total personnel compensation	8,735	9,596	10,166
12.0	Personnel benefits	647	737	783
13.0	Benefits for former personnel	7		
21.0	Travel and transportation of persons	72	73	73
	Payment to interagency motor pools	9	9	9
22.0	Transportation of things	12	13	13
23.0	Rent, communications, and utilities	75,656	87,031	93,145
24.0	Printing and reproduction	72	73	73
25.1	Other services	1,386	1,441	1,505
25.2	Services of other agencies	1,121	1,125	1,125
26.0	Supplies and materials	103	103	103
31.0	Equipment	89	600	700
	Total costs, funded	87,908	100,802	107,695
94.0	Change in selected resources	−702	−315	−100
99.0	Total obligations	87,206	100,487	107,595

PERSONNEL SUMMARY

Total number of permanent positions	1,439	1,586	1,714
Full-time equivalent of other positions	87	65	68
Average number of all employees	1,453	1,565	1,653
Average GS grade	4.6	4.5	4.4
Average GS salary	$5,956	$6,125	$6,071
Average salary of ungraded positions	$6,307	$6,343	$6,343

Mr. EVINS. The Federal Telecommunications Fund. Mr. Reporter, place in the record pages 105 and 106.

(The pages follow:)

GENERAL STATEMENT

This fund, authorized by Public Law 87-847, approved October 23, 1962, finances, on a reimbursable basis, a telecommunications system for the Federal Government operationally compatible with military communications systems. The system provides local and long-distance voice, teletype, data, facsimile, and other communications services.

Expenses payable from the fund include personal services, procurement by lease or purchase of equipment and operating facilities (including cryptographic devices), and other costs necessary to operate the system. These expenses are reimbursed from available appropriations and funds of any agency, organization, or persons for telecommunications services and facilities made available to them.

Initial capital of $9 million was appropriated by Public Law 88-25, approved May 17, 1963. This sum may be increased by donations of supplies and equipment.

The estimate provides for a continued increase in volume and quality of communications services provided to executive agencies of the Government. Total sales for 1967 were $88.3 million and are estimated at $100.4 million in 1968 and $107.3 million in 1969.

1. *Voice program.*—Provides for a telephonic system which will enable personnel in each Federal agency office to communicate directly on a machine-to-machine or station-to-station basis with any other agency office in the Nation. The system will provide day-to-day service as well as incorporate features which would be necessary in emergency situations. The program for 1969 contemplates a sales level of $90 million, an increase of about 4.6 percent over 1968, and an anticipated traffic volume of 52 million intercity calls being handled by FTS.

2. *Record program.*—A common unified system to satisfy record communications requirements of all Federal civil agencies by providing machine-to-machine service for transmission of information by data, teletypewriter, facsimile, and other transmission media while at the same time providing message processing capability required for peak-period traffic loads, time zone differences, machine code and language translation, and processing of multiple address messages. The

continued development of the records program is reflected in the projected sales of $11.5 million in 1969. This is an increase of 23 percent over 1968 sales.

3. *Circuit procurement program.*—Provides for centralized procurement of circuits while at the same time permitting each agency to maintain operational control over its own circuits, thereby obtaining benefit of multiple tariff offerings of the commercial carriers. The sales program increases from $4.3 million in 1968 to $5 million in 1969.

4. *Special programs.*—Provides for an effective communications security program for civil agencies in keeping with objectives of the U.S. communications security plan, and for a consolidated program of procurement and maintenance of equipment to implement such security plans. These programs insure that the Federal Telecommunications System will remain operational in the event any portion of the normal system is disabled or destroyed." (From the budget for 1969.)

COMPARATIVE STATEMENT OF CAPITAL AND FINANCING

[Dollar amounts in thousands]

	As of June 30—				Remarks
	1967	1968	1969	Change from 1968	
A. Financing available:					
1. Capital appropriation	$9,000	$9,000	$9,000	.....	No additional capital is requested in 1969.[1]
2. Capitalized assets	293	293	293	.....	
3. Less provision for unfunded leave liability.	−533	−533	−533	.....	
Total financing available	8,760	8,760	8,760	.....	
B. Application of financing:					
1. Assets:					
(a) Working cash	14,032	13,813	9,325	−4,488	
(b) Accounts receivable	9,714	9,714	11,400	+1,686	Receivables are based on an estimated 40-day cycle which represents the time factor required to prepare bills for services rendered and allow sufficient time for payments to be processed.
(c) Equipment, net	863	1,278	1,718	+440	Provides for purchase and installation of cryptographic and related equipment primarily for use by other agencies. The net increase in fiscal year 1969 over fiscal year 1968 of $440 results from the following: Equipment purchases, $700; Depreciation, $260; Net additional equipment, $440.
(d) Other assets	649	450	350	−100	
(e) Total assets	25,258	25,255	22,793	−2,462	
2. Deduct—					
(a) Accounts payable	15,962	15,962	13,500	−2,462	Payables are based on an estimated 45 days which primarily represents the time factor required to process payment of bills from common carriers for communications services purchased by the fund.
(b) Unfunded leave liability	533	533	533	.....	
(c) Retained earnings	3	.....	.....	.....	
(d) Total deductions	16,498	16,495	14,033	−2,462	
3. Total financing applied, net.	8,760	8,760	8,760	.....	

[1] Sales are estimated as follows:

	1967	1968	1969
Voice	$77,439	$86,066	$90,000
Record	5,878	9,330	11,505
Circuit procurement	4,459	4,319	5,000
Special	512	672	750
Total	88,288	100,387	107,255

STATUS OF FUND

Mr. EVINS. This fund was authorized by law, by the 87th Congress, and finances on a reimbursable basis, a telecommunications system for the Federal Government operationally compatible with the military.

The system provides local and long-distance voice, teletype data, facsimile and other communications services.

Initial capital of $9 million was appropriated by Public Law 88-25.

Tell us about the status of the fund.

I believe that you are not asking for any increase in the fund this year.

Mr. JOHNSON. No, sir; we are not asking for any additional capital in the fund. The fund is in a sound financial position.

Mr. EVINS. You had $9 million originally and then you had some assets added to it, and you had a loss that brought your fund down to $8.76 million, and it has remainded at that. You have over $8 million in the fund?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. What was the nature of the losses, the $500,000?

Mr. JOHNSON. That is a provision for leave liability. When we take an employee into the fund we assume a certain amount of his leave which has been accumulated, and if he leaves us we have to pay for it. It is a simple reserve for future payment.

Mr. EVINS. Reserve for future payment on leave at termination?

Mr. JOHNSON. Yes.

SPECIAL PROGRAMS

Mr. EVINS. These special programs insure that the Federal Telecommunications System will remain operational in the event of any portion of the normal system is disabled.

What is the nature of your special program?

Mr. WILLIAMS. These involve cryptographic requirements, in large measure, where agencies have requirements for secure communications, and we either provide this for them or provide maintenance for cryptographic devices.

Mr. EVINS. Is that used very extensively?

Mr. WILLIAMS. No, sir.

Mr. JONAS. Do you have anything to do with the Moscow-Washington line?

Mr. WILLIAMS. We have nothing to do with that.

Mr. JONAS. That is the Department of Defense?

Mr. WILLIAMS. Yes, sir.

Mr. EVINS. Permanent positions from 1968 to 1969 go up from 1,586 to 1,714. That is a large increase, about 130 permanent positions.

You told us earlier that you are operating at about the same level, only a 10 increase. This shows 128.

Mr. WILLIAMS. Those ten are in the operating expense appropriation. These others are in the operations covered by the telecommunications fund. There is an increase of 128 employees, 16 for the record program, one for the circuit procurement program and the remaining 111 are telephone operators, which we must provide.

COST OF TELEGRAMS AND ADVANCED RECORD SYSTEM

Mr. MARSH. Mr. Chairman, to what extent are costs increasing or decreasing on the use of telegrams?

Mr. WILLIAMS. The use of telegrams?

Mr. MARSH. Yes, by the agencies.

Mr. KNOTT. They are decreasing.

Mr. WILLIAMS. Those commercial telegram costs are decreasing and being replaced by the advanced record system, which is a part of our total communications system.

Mr. MARSH. Are there certain instances involved where agencies are required, by statute, to use telegrams on notification of hearings or deadlines directed to some organization or individual?

Mr. WILLIAMS. I know of nothing that requires them to use telegrams, per se.

There are requirements that they have a record type of communication, something that is printed rather than an oral type, which one might give over a telephone.

You see, our advanced records system has some features comparable to the telegraph service as well as being a data transmission system.

CERTIFIED MAIL VERSUS REGISTERED MAIL

Mr. MARSH. The second question is: To what extent is certified mail being used in lieu of registered mail, where notices are required?

Mr. WILLIAMS. I cannot answer your question, sir.

Mr. MARSH. To what extent are Federal agencies, as a part of your effort to cut down paperwork in this type of thing, being encouraged to use certified in lieu of registered mail?

Mr. WILLIAMS. This is not in our area of responsibility. I cannot respond to the question, sir.

Mr. MARSH. Does registered mail not require greater time consumption to post a letter than a certified letter, from the standpoint of record keeping?

Mr. JOHNSON. It would seem to me we would have to ask the Post Office, because we do not use a great deal of either type mail.

Mr. MARSH. To what extent have you said in your operations instructions that we should use certified instead of registered mail?

Mr. JOHNSON. We have issued no instructions that only security mail will be registered.

As I say, we use very little of either type.

Operating Expenses, Property Management and Disposal Service

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Inventory management:			
	(a) Strategic and critical materials	11,911	11,456	12,702
	(b) Real property	565	900	900
	(c) Industrial reserve	822	804	806
	Total, inventory management	13,298	13,160	14,408
	2. Property disposal:			
	(a) Strategic and critical materials	3,706	3,723	4,429
	(b) Real property	1,394	1,512	1,522
	(c) Personal property	5,004	5,127	5,135
	Total, property disposal	10,104	10,362	11,086
	3. Research and planning	813	1,613	1,622
	4. Service direction	752	622	627
	5. Administrative operations	1,769	1,913	2,027
	Total program costs, funded [1]	26,736	27,670	29,770
	Change in selected resources [2]	272	330	730
10	Total obligations	27,008	28,000	30,500
	Financing:			
16	Comparative transfers from other accounts	−27,008		
	New obligational authority		28,000	30,500
	New obligational authority:			
40	Appropriation (special fund)		27,300	30,500
42	Transferred from other accounts		420	
43	Appropriation (adjusted)		27,720	30,500
44	Proposed supplemental for civilian pay act increases		280	
	Relation of obligations to expenditures:			
10	Total obligations	27,008	28,000	30,500
70	Receipts and other offsets (items 11–17)	−27,008		
71	Obligations affecting expenditures		28,000	30,500
72	Obligated balance, start of year			3,800
74	Obligated balance, end of year		−3,800	−4,820
90	Expenditures excluding pay increase supplemental		24,000	29,400
91	Expenditures from civilian pay act supplemental		200	80
	Expenditures are distributed as follows:			
01	Out of current authorizations		24,200	26,900
02	Out of prior authorizations			2,580

[1] Includes capital outlay as follows: 1968, $103,000; 1969, $766,000. Excludes adjustment of prior year costs of −$9,000.
[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $1,609,000 (1967 adjustments −$28,000); 1967, $1,853,000; 1968, $2,183,000; 1969, $2,513,000.

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	9,546	10,261	10,411
11.3	Positions other than permanent	158	180	180
11.5	Other personnel compensation	49	47	47
	Total personnel compensation	9,753	10,487	10,637
12.0	Personnel benefits	741	791	801
13.0	Benefits for former personnel	32		
21.0	Travel and transportation of persons	247	380	380
	Payment to interagency motor pools	106	111	111
22.0	Transporation of things	787	474	613
23.0	Rent, communications, and utilities	859	921	914
24.0	Printing and reproduction	250	251	251
25.1	Other services	9,479	9,519	10,212
25.2	Services of other agencies	3,244	3,576	4,432
26.0	Supplies and materials	1,291	1,247	1,243
31.0	Equipment	94	103	103
32.0	Lands and structures			663
41.0	Grants, subsidies, and contributions	125	140	140
42.0	Insurance claims and indemnities	1		
99.0	Total obligations	27,008	28,000	30,500

PERSONNEL SUMMARY

Total number of permanent positions	1,188	1,159	1,159
Full-time equivalent of other positions	32	36	36
Average number of all employees	1,128	1,121	1,121
Average GS grade	8.4	8.6	8.6
Average GS salary	$9,335	$9,912	$9,947
Average salary of ungraded positions	$6,730	$6,730	$6,730

Mr. EVINS. Let us take a look at volume III now.

This is the property management and disposal service. This service is responsible for administering the national and supplemental stockpiles of strategic and critical materials; the Defense Production Act and other raw materials and machine tool programs; utilization of excess and disposal of surplus real property; and the rehabilitation of personal property. You want to go up from $28 million to $30.5 million; an increase of $2.5 million. But the job level remains the same.

Mr. Administrator, do you want to comment on your accomplishments in this division?

Mr. KNOTT. Well, Mr. Chairman, this service was created a little over a year ago by the consolidation of the old Defense Materials Service and the Utilization and Disposal Service. They were brought together with a reduction in the budget at that time of something like $1 or $1.5 million in 1968; and the principal reason for the increases this year has to do with one particular item, in buying the land under a $6 million warehouse facility in Hammond, Ind.

PURCHASE OF LAND AT HAMMOND, IND.

Mr. EVINS. Why did you build that facility in the first place without buying the land?

Mr. KNOTT. That is not an unusual inheritance of GSA in many of the depots it has taken over.

Mr. EVINS. This was not one of your initial acts. Why did you wait until the price went up? You had the warehouse for years.

Mr. KNOTT. On this land, that is right; and as long as the rent remained low, there seemed to be no particular incentive to buy the land, and we hoped eventually to move the materials out.

Actually, the rental is being increased now primarily because of the tax structure. We reached a point where we think that we ought to exercise our right to buy, and it is time to do so.

I think you have the details, Commissioner Harlan.

Mr. EVINS. How long has the warehouse been out at Hammond, Ind.?

HAMMOND, IND. WAREHOUSE FACILITY

Mr. HARLAN. Mr. Chairman, the Government has been there since 1949.

Mr. EVINS. Whose warehouse was it? Which agency had control of it before it was assigned to GSA?

Mr. HARLAN. It was the War Assets Administration.

Mr. EVINS. The old War Assets Administration?

Mr. HARLAN. Yes, sir.

There were already three Government-built structures on the property.

We have constructed three more warehouses and a tank farm at the depot.

Mr. EVINS. Do you think it would be more economical to purchase the land and discontinue your rental payments?

Mr. HARLAN. For two reasons, Mr. Chairman: the rent, when the lease expires in September of 1969, will be increased to about $100,000 per year. We are paying about $34,000 a year now; by purchase at $663,000, we could amortize that in a 6-year period. In addition if we are successful through the disposal program in consolidation, and being able to give up that depot, if we own the land, we will be able to do a much better job of disposing of it and getting our money out of it.

Mr. EVINS. Is this the same principle as the purchase of the lease-rental properties?

Mr. HARLAN. Just about, yes.

Mr. EVINS. Commissioner Harlan, you show your increases on page III–3, but you do not show this particular item.

You show the Pay Act of $166,000, stockpile storage of $1.287 million. Is that purchase price included in that?

Mr. HARLAN. It is included under the inventory management.

Mr. EVINS. You have stockpile disposal, $1 million, and administration operations, $90,000.

It is not shown out here in your increases, unless it is included in one of those figures.

Mr. HARLAN. It is included. It is under inventory management.

Mr. EVINS. How much is the actual cost of the land?

Mr. HARLAN. $663,000. That is an offer we have on it.

We have appraised the property and are satisfied it is a very good offer.

PUBLIC HEALTH SERVICE STORAGE FACILITY AT NEOSHO, MO.

Mr. JONAS. May I ask a question, Mr. Chairman?

Mr. EVINS. Yes.

Mr. JONAS. One of our colleagues is disturbed about a proposal to abandon a depot at Neosho, Mo., which you are managing for the Office of Civil Defense.

Mr. HARLAN. Public Health Service, underground storage.

Mr. JONAS. Any developments occur out there?

Mr. HARLAN. We are under direction from the Public Health Service to move out of there.

We are consolidating the medical supplies in storage there and also storage in two other places into a centralized location.

Mr. JONAS. Why would this be a high-cost depot? It is underground and fireproof.

I would not think it would require as much guarding. What are the elements to go into this?

Mr. HARLAN. It is the upkeep problem we run into with it. It is one of the oldest.

Mr. JONAS. You have what, three underground storage facilities?

Mr. HARLAN. We have three altogether, right now.

Mr. JONAS. Are you closing all of them?

Mr. HARLAN. No, sir.

Mr. JONAS. Just this one?

Mr. HARLAN. We are keeping two in Pennsylvania.

Mr. JONAS. Have you made a comparison of the relative costs of maintaining the depot in Neosho, Mo.?

Mr. HARLAN. Yes, we did. The Neosho depot is definitely more expensive.

Mr. JONAS. Would it be satisfactory if the cost were being reduced through a renegotiated contract?

Mr. HARLAN. The main aim is the consolidation. If we can get out of that depot plus two others by consolidating in one central place, it would be more economical.

Mr. EVINS. You are disposing of more of your properties as you go along?

Mr. HARLAN. Yes, sir.

Mr. EVINS. You claim now that you have less need for storage space.

Mr. HARLAN. That is right.

SHARONVILLE, OHIO, STORAGE FACILITY

I expect this next year to be able to get out of the Sharonville, Ohio, depot. This will mean that whole depot, except for a small area for outside storage, will be disposed of.

Mr. EVINS. It is your judgment you should dispose of some, but you want to acquire the land at Hammond, Ind. Will this be a permanent one?

Mr. HARLAN. No, sir; we want to acquire the land there because it is in the best interest of the Government to get it. I want to be able to get out of Hammond later.

CONSOLIDATION OF DIXON FACILITY AT TERRE HAUTE

Mr. JONAS. What do you have at Dixon?

Mr. HARLAN. We moved the machine tools out and consolidated them at Terre Haute, Ind.

Mr. JONAS. Is the space now vacant?

Mr. HARLAN. Yes, sir.

Mr. JONAS. How long has it been vacant?

Mr. HARLAN. About 6 months. I think we have completed the movement of the machine tools, just a few months ago.

Mr. JONAS. What will be required to renovate it or rehabilitate it for medical supply storage?

Mr. HARLAN. Very little, because they do not require anything special. The Dixon depot has been fixed up for storage of machine tools, so I think there will be very little cost involved in Dixon.

Mr. EVINS. Is there not a substantial cost in moving these properties from one depot to another?

Mr. HARLAN. Yes, sir; when we plan these consolidations, we figure on how long it will take us to amortize the cost of the movement in terms of what we will save by moving out of these locations. And normally, if we can amortize them in a period of up to 5 years, we consider it worthwhile.

NUMBER OF STORAGE LOCATIONS

Mr. EVINS. Tell the committee again how many depots are under your jurisdiction.

Mr. HARLAN. There are 144 storage locations.

Mr. EVINS. 144 storage locations.

Mr. HARLAN. For the stockpile.

Mr. JONAS. Are you acquiring any new storage space?

Mr. HARLAN. No.

Mr. JONAS. In this present program, that is.

Mr. HARLAN. No, sir.

Mr. JONAS. It does not call for any additional space not already owned by the Government?

Mr. HARLAN. No, sir.

Mr. JONAS. No new leases?

Mr. HARLAN. No. As I reported to the committee, I think it was 2 years ago, or maybe last year, under the disposal program we are moving out materials at the rate of in excess of 1 million tons a year. If we continue successfully along these lines, by 1970 or 1971 we should be in a position where some major consolidations could be undertaken which would mean we would be giving up quite a considerable amount of space.

Mr. JONAS. How many of the 144 are rented?

Mr. KNOTT. Some of those are plantsites, that is at the owner's site.

Mr. HARLAN. We have only nine commercial warehouses, as such, where we are actually renting commerical space. We brought that down from a figure of over 70. We had, in 1960, 73 commercial warehouses. At the moment we have nine, and by the end of 1969 we will be in only six commercial warehouses, with an annual storage cost of $103,000.

INCREASED DOD STORAGE RATES

Mr. EVINS. Mr. Administrator, aren't your administrative costs a little high? You have been consolidating, yet your administrative costs continues to increase.

For instance, inventory management is up $1.304 million.

Mr. KNOTT. One of the elements of cost in inventory management is the charges that are being made by the military to the Property Management and Disposal Service for the maintenance and operation of these warehouse facilities.

That increase, Commissioner, has gone up how much in the last year?

Mr. HARLAN. The military has given us new rates, based on their most recent survey of what it is actually costing them. They have not adjusted their rates to us since 1959.

That increase in rate is going to mean a $1 million increase in this budget, $637,000 of which is in this inventory management category.

ACQUISITION OF LAND AT HAMMOND, IND.

Mr. BOLAND. Can you indicate in this particular item that the acquisition of this Hammond, Ind., site is included?

Mr. KNOTT. It is in there.

Mr. EVINS. On page III–5 you state that in negotiating with the New York Central Railroad for extension of the lease they have proposed an annual rental of $66,000, plus taxes, as compared with the present rental of $34,000.

As an alternative, they are willing to sell the land for approximately $663,000. This is the Hammond Depot.

Mr. HARLAN. Yes, sir.

Mr. EVINS. In view of your plans for ultimately abandoning the facility, could you not abandon the whole thing now or consolidate it and not have to acquire it?

Mr. HARLAN. It would be too expensive to try to move the materials out until we can do it by the disposal process.

In the next few years, if we can move them out through disposal, we can move them out sufficiently economically, and then it would be to our advantage to buy the depot.

Mr. EVINS. Off the record.

(Discussion off the record.)

ACQUISITION OF MATERIALS TO MEET STOCKPILE OBJECTIVES

Mr. EVINS. How much more material do you have to acquire to meet the stockpile objectives?

Mr. HARLAN. There is about $417 million worth of material still needed for the stockpile.

Mr. EVINS. You need $417 million more in the stockpile.

You want to trade some for what you need, giving you barter authority?

Mr. HARLAN. Exactly. Up until now we have been depending on agricultural barters, but this is no longer possible.

Mr. EVINS. Do these items go into the strategic materials stockpile?

Mr. HARLAN. Yes, sir; these are all stockpile items that go into the strategic materials stockpile.

USE OF STOCKPILE MATERIALS AS PAYMENT FOR NEW PROCUREMENT

Mr. EVINS. You have a surplus of other things, and you will trade. Are you able to negotiate good trades?

Mr. HARLAN. Yes.

Mr. EVINS. How much does this amount to in volume?

Mr. HARLAN. This year, the OEP is asking me to try to get $128 million worth of 13 or 14 items. I will get a purchase directive to acquire that much.

Mr. EVINS. The Office of Emergency Planning?

Mr. HARLAN. Yes, sir.

DEFENSE PRODUCTION ACT AND COPPER EXPANSION

Mr. EVINS. What about administering the Defense Production Act?

Mr. HARLAN. I have the custody of materials that are acquired, and we have also this year entered into a copper expansion contract with the Duval Co., involving about $150 million worth of loans and advances against purchase contracts.

Mr. EVINS. You really do not exercise too much decisionmaking in these matters; you advise what to do after the decision is made.

The Office of Emergency Planning tells you to buy and on what terms.

Mr. HARLAN. They tell me to expand the copper production by 100,000 tons. I have to take it from there.

We go out to the possible mining companies. I think we screened 147 companies before we finally came up with a company with which we though we could make a successful deal.

Mr. EVINS. You have certain items in your surplus supply and you ask them, could you take some of these for some of the other material that we need?

Mr. HARLAN. They set the level for the stockpile, and if, in my inventories, I have more than the level established by them then, as a good property manager, it becomes my job to try and get rid of the excess.

UPGRADING SYSTEM

Mr. EVINS. Tab B shows the upgrading program for 1969.

How does this program work?

Mr. HARLAN. This is a barter transaction, pretty much like we were talking about a few minutes ago.

We make a deal with the companies that handle the processing of these ores to process them, usually into ferro's or some other higher use form, and we pay for the processing cost; and to the extent it is possible the movement in and out of materials, by using excess materials for payment.

I think the budget shows we are only asking for about $42,000 for possible cash contingencies.

Mr. EVINS. Who asks you for the upgrading, the Office of Emergency Planning?

Mr. HARLAN. The Office of Emergency Planning. They have had a program for a long time, and we are getting close to the end of that program in 1969.

Mr. EVINS. You have certain materials here.

Mr. HARLAN. Well, for instance, we have large quantities of manganese ore, and they make a decision that conditions in the industrial pattern would require that some of that ore be converted to ferromanganese form, because the ferro-producing industries of the country, according to their calculations, would not be able to provide an adequate supply for a 6-month emergency period. They say to us: "Convert a certain quantity of this material to the higher use form."

Mr. EVINS. How do you pay for the upgrading?

Mr. HARLAN. It is paid for with the materials in the stockpile which belong to us.

Mr. EVINS. They ask you to upgrade it for them.

Mr. HARLAN. That is right.

Mr. EVINS. But they do not pay for it?

Mr. HARLAN. We pay for that upgrading by either coming to you and asking you for money, or by using excess materials in the stockpile to pay for them.

Mr. EVINS. You must be able to use a lot of your barter power.

Mr. HARLAN. It is very complicated.

Mr. TALCOTT. What if there isn't enough manganese ore to convert to a higher use, and yet you need more manganese ore to convert to this higher use? What do you do?

Mr. HARLAN. This is the authority we were talking about previously. We are asking for authority in the appropriation language to fill that shortage of manganese ore by exchanging something we have an excess of, rather than buying the material with cash.

Mr. JONAS. Generally, what is the length of our stockpile years?

Mr. HARLAN. Three years.

Mr. JONAS. We are now on a 3-year basis?

Mr. HARLAN. Yes, sir.

Mr. JONAS. It originally was 5 years.

Mr. HARLAN. It was five and they reduced it to three. That is how most of the surplus came about.

EXCESS AND SURPLUS REAL PROPERTY

Mr. EVINS. Under real property inventory management you show a certain amount and you also show $140,000 total cost or estimate, payments in lieu of taxes.

How many pieces of property are involved and how is this handled?

Mr. HARLAN. We get real property turned over to us at a rate of about 800 to 850 parcels per year and, roughly, we are working off this same number through the disposal program.

Mr. EVINS. On an annual basis about 800 or 850 parcels of land are turned over to you; that is to the GSA.

Mr. HARLAN. Yes. The owning agency says they no longer have a need for the property and it is declared excess.

PAYMENT IN LIEU OF TAXES

Mr. EVINS. You have to pay the taxes?

Mr. HARLAN. Only in one case are we involved in payment in lieu of taxes, and that has to do with a leasing arrangement with the National Lead Co.

Mr. JONAS. What about in Michigan? Did they not get some special legislation through for Michigan?

Mr. HARLAN. Not involving any of my property.

Mr. KNOTT. That was the Muskegon property which was disposed of. These were old RFC properties that were transferred into the national industrial reserve. We are down to one of those properties.

Mr. HARLAN. That law which requires payment in lieu of taxes keeps getting extended each year, and this is the only property involved.

NATIONAL INDUSTRIAL EQUIPMENT RESERVE

Mr. EVINS. Industrial reserve is concerned with the management, testing, maintaining, disposing of machine tools and industrial equipment involving a national industrial equipment reserve inventory of nearly 9,500 tools with an acquisition cost of $72.8 million.

Mr. HARLAN. They are made available for possible selection for the national industrial equipment reserve, which is a standby reserve to supply defense-supporting industries in event of emergencies and only when we do not need them for this reserve do they become available for disposal.

Mr. BOLAND. You have nothing to do with the price of the lease or what you charge a particular company to——

Mr. HARLAN. Oh, yes; once in a while the Department of Defense will direct us to work out a lease arrangement with an industry, and when that happens, industry pays us the established rental.

I think the OEP establishes the rental rates, but industry has to pay use rental for each tool and they have to pay for the cost of moving it to and from storage.

Mr. BOLAND. Isn't this the area in which there was considerable discussion over what industry is actually paying?

Mr. HARLAN. That is right. The Department of Defense, on the other hand, makes tools available to defense industries as Government-furnished material.

Mr. BOLAND. Yes.

Mr. HARLAN. When they do that, they don't charge them any rent.

Mr. MOODY. The record ought to show it was not the tools in our reserve, but it was the tools that are in the Military Department.

Mr. BOLAND. These tools are not in the national industrial reserve?

Mr. HARLAN. They are not.

Mr. EVINS. What percent of the tools are being used in the current emergency?

Mr. HARLAN. We have been called on for only 20 items, I believe, so far, out of the national industrial equipment reserve.

Mr. EVINS. The Department of Defense has a much larger reserve of tools. They have about 9,500.

Mr. MOODY. It is about 9,500.

INVENTORY MANAGEMENT JUSTIFICATION

Mr. EVINS. Place in the record pages III–7 to III–12.
(The pages follow:)

1. INVENTORY MANAGEMENT

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
(a) Strategic and critical materials	$12,072,562	$11,560,800	$12,910,600
(b) Real property	569,347	924,000	924,000
(c) Industrial reserve	874,879	842,000	796,000
Total cost of estimate	13,516,788	13,326,800	14,630,600

HIGHLIGHT

"Covers the cost of acquiring, upgrading, rotating, inspecting, and maintaining materials in the national and supplemental stockpiles, administration of the national industrial equipment reserve, providing protection and maintenance of excess, surplus, and national industrial reserve real properties, and payments in lieu of taxes on certain properties as required by law. No rotation of materials is planned for 1969. If unexpected circumstances should require rotation, any cash receipts from sales of materials to be rotated would be available, pursuant to the Strategic and Critical Materials Stock Piling Act, for application against the cost of replacement materials." (From the budget for 1969.)

	Amount	Average employment		
		Central office	Field	Total
1968	$13,326,800	50.2	376.0	426.2
Change	+1,303,800			
1969	14,630,600	50.2	376.0	425.2

No increase in employment is requested for the inventory management activity. The increase in 1969 is primarily due to increased reimbursement to DOD for storage and handling at military depots and the acquisition of property at Hammond, Ind., for the storage of strategic and critical materials. Program status is discussed and justified for each subactivity in the following.

JUSTIFICATION

(a) *Strategic and critical materials.*—Strategic and critical materials amounting to approximately 41.9 million tons and valued at $5.9 billion were stored at 148 locations as of June 30, 1967. This subactivity provides for acquisition of new materials, upgrading of materials in inventory, depot storage operations, and other storage costs such as inspection and stockpile management services relative to maintaining the national and supplemental stockpiles.

(1) ACQUISITION OF NEW MATERIALS

	1967	1968	1969
Total cost or estimate	$519,929	$610,000	$610,000

The cost estimate provides for the procurement in 1969 of jewel bearings only, in accordance with OEP program advice, the same as for 1968. The proposed 1969 appropriation language provides an additional method of acquisition through the medium of payment-in-kind. The table on exhibit A, tab A, reflects the status of the materials for which stockpile objectives had not been reached as of June 30,

1967. Total objectives, using June 30, 1967, prices are valued at $3.9 billion of which $3.2 billion is on hand.

As of June 30, 1967, there were 77 materials having objectives on the stockpile list for which the objectives on 65 have been met.

(2) UPGRADING OF MATERIALS

	1967	1968	1969
Total cost or estimate	$16,448	$42,000	$42,000

Stockpile materials are upgraded to more usable forms to provide a minimum readiness inventory of materials in forms suitable for immediate use to meet the initial surge of demand and abnormal conditions of intensive mobilization. Materials are upgraded only to such a degree as not to impair flexibility of use, and all upgrading is within stockpile objectives which have been established by OEP after interagency advice and consultation. Materials in the stockpile are upgraded only when cost of upgrading is less than the cost of new materials.

Payment for all processing and transportation costs for upgrading materials will be made through the use of excess materials from stockpile inventories to the maximum extent possible. The estimate provides only for cost of handling, sampling, and analysis of materials.

In 1969 planned upgrading will include tantalite-columbite ores and concentrates to tantalum metal, and tungsten concentrates to tungsten metal carbide powder.

Exhibit B, tab B, shows the upgrading programs for 1968 and 1969 and the status of the total program in relation to objectives established by OEP for upgraded forms.

(3) STORAGE OPERATIONS

	1967	1968	1969
(a) Storage costs	$9,713,820	$8,900,000	$10,195,000
(b) Other costs	1,822,365	2,008,800	2,063,600
Total cost or estimate	11,536,185	10,908,800	12,258,600

Distribution of depot storage costs for the 41.9 million tons of strategic and critical materials is as follows:

[In thousands of dollars]

	1967 actual	1968 estimate	1969 estimate
Recurring costs	$7,381	$7,300	$7,732
Nonrecurring costs	1,617	1,200	1,200
Relocation, transportation, and handling	716	400	600
Purchase of Hammond property			663
Total cost or estimate	9,714	8,900	10,195

(Workload and unit costs for depot operations are shown on exhibit C, tab C.)

This estimate provides for operating GSA depots, including maintenance, fire protection, security guarding, utilities, and supply management personnel; reimbursement to the Department of Defense for storage at military facilities; and storage costs at industrial plant sites, commercial warehouses, and miscellaneous leased sites. Also included are repairs and improvements of Government-owned facilities; protective coverings for ore piles and repackaging of materials in long-term containers in order to preserve the value of materials in stor-

age; rehabilitation of sprinkler systems to properly protect inventories and Government-owned facilities as well as projects for relocating materials to effect long-term savings in storage costs or to improve the strategic security position of inventories.

The estimate for 1969 includes $663,000 for the acquisition of approximately 133 acres of privately owned land (underlying GSA warehouses and a tank farm) at Hammond, Ind., the leasing of which is no longer considered economical to the Government. An appraisal of this property during the last quarter of fiscal year 1967 established the fair market value of the land to be acquired at a figure indicating the soundness of the $663,000 which the present owner appears willing to accept. Although every effort will be made to acquire the property through the medium of exchange for other Government-owned property, funds are being requested in this estimate in the event such transaction does not materialize.

The remainder of the increase, $686,800, is due primarily to additional costs for relocation and storage. The increase in storage costs is mainly at military depots and results from DOD increasing its storage rates, reimbursable from this appropriation. Although their costs have been increasing steadily, no change in rates has been made since 1955. Changes effective July 1, 1968, will increase rates for open space by 28 percent and for closed storage by 40 percent.

The estimate also includes other related storage costs of inspection and stockpile management. The inspection staff continues to emphasize inventory verification and inspection of materials prior to outshipment under the disposal program. Technically qualified personnel are required due to the complex nature of the materials, variations in grades, and the precise nature of the materials called for by the contracts. In addition, this activity assures that the qualitative and quantitative contract provisions are met on (a) materials intended for delivery under procurement, upgrading, and rotation contracts, (b) containers and packaging materials, (c) performance against service type contracts to assure proper application of protective coverings to ore piles or the processing of materials, and (d) providing that quality assurance controls are exercised on upgrading projects including investigation of contractor's facilities, experience, product quality, and performance capability.

The stockpile management staff plans, directs, and coordinates, on a nationwide basis, activities relating to storage, handling, maintenance, protection, and distribution of strategic materials. These activities include the operation of storage depots; acquisition, assignment, and utilization of storage space; site preparation; strategic dispersal planning; development and application of improved storage standards; qualitative maintenance of materials and facilities; and arranging for outloading and shipping materials sold on disposal programs.

b. *Real property.*—Provides physical care, handling, protection, maintenance, and repairs of certain excess and surplus real properties pending disposal, and payments in lieu of taxes on certain properties as required by law.

(1) PROTECTION AND MAINTENANCE

	1967	1968	1969
Total cost or estimate	$444,194	$784,000	$784,000

The funds requested for 1969 will provide minimum services necessary for the protection of property awaiting utilization or disposal and to preserve the Government's interest therein, with due regard to the realizable value of the property. Exhibit D, tab D, lists the excess, surplus, and national industrial reserve properties for which protection and maintenance expenses are incurred.

(2) *Payments in lieu of taxes*

Total cost or estimate:

	Amount
1967	$125,153
1968	140,000
1969	140,000

Provides for payments in lieu of taxes on one remaining property, National Lead Co., Tahwus, N.Y., as required by the act of Congress approved August 12, 1955 (69 Stat. 722), as amended (40 U.S.C. 523).

c. *Industrial reserve.*—This subactivity covers the management, receipt, processing, testing, storage, maintenance, field inspection, lending, leasing, and disposal of machine tools and industrial equipment involving a National Industrial Equipment Reserve inventory of 9,463 tools with an acquisition cost of $72.8 million as of June 30, 1967. The reserve of Government-owned machine tools and other industrial manufacturing equipment authorized by the National Industrial Reserve Act of 1948 consists of items selected by the Secretary of Defense from lists of such property declared excess to the needs of the three military departments and other executive agencies. Items in the National Industrial Equipment Reserve are intended primarily to assure machine tools and industrial manufacturing equipment for immediate use to supply the needs of the Armed Forces in time of national emergency. It is also the intent of the Reserve to support educational and vocational training institutions when it is determined that such programs are in the interest of national defense.

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
Total cost or estimate	$874,879	$842,000	$796,000

Inventory changes, performance, and comparative costs are reflected in exhibits E and F, tabs E and F. Decrease in workload is due primarily to a reduction in DOD tool selections which are expected to decline from 300 in 1968 to 200 in 1969, and consolidation of activities in two depots.

At the end of fiscal year 1967 lease and loan agreements with 213 vocational schools and three defense support industries covered 5,087 tools with an acquisition cost of $21.4 million. It is estimated that by the end of 1968 and 1969 a total of approximately 5,987 and 6,362 tools will be on lease or loan to 238 and 263 schools and industries, respectively. During 1967, the DOD authorized and GSA entered into 32 loan agreements with vocational schools for equipment in the NIER, where such loans were in the interest of national defense.

In addition, during the past year the Department of Defense has withdrawn 624 tools valued at $12.9 million from the NIER for the use of DOD prime contractors for defense production purposes. It is estimated that during 1968 and 1969 a total of 400 each year will be withdrawn for this purpose.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$3,634,400 for 424 permanent positions. Distribution between central office and field is as follows:

	1967			1968			1969		
	Central office	Field	Total	Central office	Field	Total	Central office	Field	Total
Total permanent positions	56.0	390.0	446.0	53.0	371.0	424.0	53.0	371.0	424.0
Average employment	49.8	370.4	420.2	50.2	376.0	426.2	50.2	376.0	426.2

12 *Personnel benefits.*—$279,400 includes $227,600 for direct contribution to retirement fund; $28,000 for health benefits; $11,800 for group insurance, and $12,000 for reimbursement from the employees compensation fund, pursuant to Public Law 86–767.

21 *Travel and transportation of persons.*—$179,100 includes $133,100 for travel, based on 4,930 days at an average of $27 per day, and $46,000 for motor pool services in connection with the management and operation of storage depots and to provide full utilization of personnel between depots in order to meet workload demands.

22 *Transportation of things.*—$496,900 for relocation of materials, consolidation of inventories due to evacuation of depots, transportation of operating equipment between depots, and movement of NIER items.

23 *Rents, communications, and utilities.*—$143,400 includes $83,800 for local and long distance telephone and teletype services, $28,000 for postage and fees, $18,100 for utilities, machine rental and rental of equipment required by warehousing and inspection, and $13,500 payment to GSF for depreciation of administrative furniture and equipment.

24 *Printing and reproduction.*—$7,900 for printing and reproduction of inspection and qualitative maintenance reports, and receiving and shipping documents at the depots, storage control reports, contracts and purchase orders.

25 *Other services.*—$4,913,800; $103,000 for commercial storage $10,000 for tests and analyses performed by facilities other than GSA, $29,000 for plant-site storage and miscellaneous leases, $196,000 for relocation handling, $42,000 for expenses connected with the upgrading program, $542,000 for special care and repackaging, repairs, improvements, site preparation, et cetera, $29,100 for ADP costs for the programing and converting of S. & C.M. inventory listings to the ADP system, and $3,962,700 for protection and maintenance of warehouses and surplus and reserve properties reimbursable to BM fund.

25 *Services of other agencies.*—$2,904,200; $2,234,500 for reimbursement to DOD for custody and related servicing of materials and equipment, including NIER at military depots, $3,700 for health room expenses, security investigations, and other administrative expenses, and $666,000 for reimbursement to holding agencies for protection and maintenance of excess, surplus, and national reserve properties.

26 *Supplies and materials.*—$1,165,900, includes $600,000 for acquisition of jewel bearings, $565,900 primarily for fuel and materials for dehumidification, packaging, lumber for boxing, crating and strapping materials, et cetera.

31 *Equipment.*—$102,600, primarily for handling, testing and processing equipment under the inventory management and industrial equipment activities.

32 *Lands and structures.*—$663,000 for the acquisition of property at Hammond, Ind.

41 *Grants, subsidies, and contributions.*—$140,000 for payments in lieu of taxes pursuant to the act of Congress approved August 12, 1955 (69 Stat. 722) as amended (40 U.S.C. 523), for 1968 taxes due in fiscal year 1969 on the National Lead Co., Tahawus, N.Y.

DISPOSAL OF STRATEGIC MATERIALS

Mr. EVINS. The chart on page III–14 shows your property disposals have gone up from $416 million to $3.075 billion. You are really disposing of your strategic materials.

What is the condition of the stockpile at the present time?

How much do you have on hand?

Mr. HARLAN. The value of what we have on hand, as of February 2, 1968, is $6.4 billion.

Mr. EVINS. You have it down to $6.4 billion. What was the highest amount?

Mr. HARLAN. The highest figure was around $9 billion.

Now, of that $6.4 billion, almost exactly half in terms of value is in excess: $3.2 billion.

Mr. EVINS. $3.2 billion is considered excess?

Mr. HARLAN. Yes, there are 92 commodities involved here, and I have now available for sale, authorized by the Congress, $1.5 billion of 58 different materiels.

Mr. EVINS. The stockpile used to be around $10 billion?

Mr. HARLAN. Yes.

Mr. EVINS. You have reduced it to $6.4 billion, and of the $6.4 billion you consider $3.2 billion as excess.

Mr. HARLAN. Yes, sir. But it is not quite that clear, because during that period when we were reducing from $10 billion to $6.4 billion,

we were also acquiring more materiels under the barter program. That offset some of the effects of our successes in disposal.

Mr. EVINS. Of the $3.2 billion, you consider excess, Congress has only authorized you to sell $1.5 billion.

Mr. HARLAN. Yes, sir.

Mr. JONAS. Do you have any copper?

Mr. HARLAN. No, sir; not today.

COMMODITIES DECLARED EXCESS

Mr. EVINS. Tell us the principal items that the Congress has declared excess and available for sale.

Mr. HARLAN. In 1968 I guess probably the biggest single item is aluminum; and then we have bismuth and cadmium, and cobalt.

Mr. EVINS. Any gold?

Mr. HARLAN. No, but I have some silver.

Mr. EVINS. Gold is in short supply.

Mr. HARLAN. I am selling silver every week. And then there are items such as aluminum.

Mr. EVINS. Aluminum is the big item that has been declared surplus.

Mr. HARLAN. That is right.

Mr. TALCOTT. Does the price of silver change from week to week?

Mr. HARLAN. Yes, sir.

Mr. KNOTT. We have had 29 sales, weekly sales so far since we started this program last July, I believe; and we have sold right at 60 million ounces for something like $107 million, which runs an average of a fraction under $1.80 per ounce.

The increment over the monetary value, $1.29, which was the Treasury's figure, is something like $30 million that we have gained as the result of these sales so far.

DISPOSAL COSTS

Mr. EVINS. You are on top of your job. You used to have $10.4 million and you are asking for $11.4 million.

Why do you need another $1 million to dispose of the stockpile?

Mr. HARLAN. For two reasons. One we have already discussed is the increase in the military handling rate; that accounts for $363,000 increase.

The other increase, however, is a result of the fact that the ores are beginning to move out and they are much more expensive for me to handle.

We sold substantial quantities, 700,000 to 800,000 tons each of chrome and manganese.

Mr. EVINS. You are caught on the horns of a dilemma. If we keep it, it costs more money; if we dispose of it, it costs more money.

Mr. HARLAN. The cost of disposal will run, overall, about 3 percent of the proceeds. That is not a bad cost.

Mr. EVINS. Say that again.

Mr. HARLAN. It will be about 3 percent of our proceeds. That is what our cost is and will amount to in the final analysis.

In other words, it is going to run somewhere between $30,000 and $40,000 per $1 million of income.

Mr. EVINS. You are saying about 97 percent goes into the Treasury.

Mr. JOHNSON. It is 97 cents on the dollar.

Mr. EVINS. You point out in your justification various benefits from these disposals.

You say (1) removal of the material from Government inventory lets you convert assets into cash; (2) recovery of the Government's investment in materiel; (3) reduction of the gold outflow; and, if you can do this, you get a star in your crown.

RUBBER

Mr. HARLAN. The rubber that I sell to the American industry keeps them from buying rubber from Malaysia.

Mr. TALCOTT. Where do you get your rubber from?

Mr. HARLAN. Out of the stockpile.

Mr. TALCOTT. But you had to obtain it from Malaysia to put it into the stockpile.

Mr. HARLAN. You are right. At one time money went out for the material.

Mr. BOLAND. We were in much better shape then, though.

Mr. EVINS. What is the condition with respect to rubber in the stockpile?

Mr. HARLAN. The market is terrible. Rubber prices have been so poor in the last couple of years that we have had to practically cut disposals back to nothing.

Mr. EVINS. I mean the quantity of rubber.

Mr. MOODY. The condition of the rubber in the stockpile.

Mr. EVINS. You have 340,000 tons of rubber in the stockpile.

Mr. BOLAND. Mostly pure or synthetic?

Mr. HARLAN. It is all pure. We bought extremely high-grade rubber because it would hold up better.

Mr. JONAS. What is the rate of deterioration on rubber?

Mr. HARLAN. Well, it depends. If you have the material stored in a dry, cold area, it is very small. If it is stored where the humidity and heat is bad, it deteriorates much faster.

If we had to rotate, it would be done on a 20-year cycle.

Mr. JONAS. Who do you sell the rubber to, replacement tiremakers?

Mr. HARLAN. Rubber product manufacturers and rubber trades people who buy from us and then resell it.

A lot of the rubber manufacturers will not buy it directly, but prefer to go through the regular trade sources.

Mr. EVINS. Tell us about the chart here on page 16, the old rate and new rate; rubber goes up.

Mr. HARLAN. That is the military increase I have been speaking about.

This shows you what we had to pay them as compared to the new rate; and the same thing with metals and so on. It is an increase of about 34 percent over what it was then.

Mr. EVINS. Let's place in the record pages III–15, 16, and 17.

(The pages follow:)

2. Property Disposal

	Amount	Average employment		
		Central office	Field	Total
1968	$10,405,100	120.3	437.0	557.3
Change	+1,068,300			
1969	11,473,400	120.3	437.0	557.3

HIGHLIGHT

"Covers the cost of disposal of strategic materials excess to objectives, utilization of excess and disposal of surplus real property, including national industrial reserve properties, utilization, donation, and sale of surplus and exchange/sale personal property." (From the budget for 1969.)

Justification of the activity is presented under the three areas summarized below. No additional staffing is requested for this activity in 1969.

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
(a) Strategic and critical materials	$3,436,047	$3,822,700	$4,846,000
(b) Real property	1,448,056	1,501,700	1,512,400
(c) Personal property	5,009,909	5,080,700	5,115,000
Total cost or estimate	9,894,012	10,405,100	11,473,400

JUSTIFICATION

a. Strategic and critical materials.—This activity provides for the disposal of excess strategic and critical materials.

	1967	1968	1969
Total cost or estimate	$3,436,047	$3,822,700	$4,846,000

Sales of strategic and critical materials are estimated at $175.3 million and $104.3 million in fiscal year 1968 and fiscal year 1969, respectively. The estimates are based on an assumption that there will be no improvement in present market conditions and no new disposal legislation will be enacted. The estimates are subject to upward adjustment under the following alternative assumptions: (a) No change in market conditions but with passage of new disposal legislation, $196 and $136.8 million, respectively; (b) upturn in economy but no new legislation, $429.3 and $198.8 million, respectively; and (c) upturn in economy and passage of new legislation, $539.3 and $302.1 million, respectively.

The estimate covers transportation, handling, and other costs in connection with disposals of excess strategic and critical stockpile materials. The benefits from these disposals are many and varied: (1) removal of materials from Government inventories thus converting Government assets into cash in the U.S. Treasury; (2) recovery of the Government's investment in the material; (3) the reduction of gold outflow; and (4) removal of the stocks of Government inventories eliminates any depressant effect which the stocks may have on the economy, while at the same time placing needed stocks in the hands of consumers to permit continued growth in the economy.

The increase in costs is due primarily to two elements: (1) the mixture of types of materials to be disposed of; namely, bulk and low value type materials

which require more handling, $645,200; and (2) for increases in reimbursement rates to military departments for increased handling costs incident to disposal, $363,000, as follows:

INCREASED DISPOSAL HANDLING RATES IN 1969 AS A RESULT OF PROPOSED RATE INCREASES EFFECTIVE JULY 1, 1968

	Old rate	New rate
Rubber.....short tons...	$6.00	$8.00
Metals.....do....	2.35	3.15
Ores.....do....	1.00	1.35
Other warehouse materials.....do....	3.25	4.30

This activity is also responsible for preparing and mailing bid invitations; analyzing and evaluating bids and offers; recommending acceptances and preparing sales contracts; and all other sales documentation in connection with the disposal of excess stockpile materials.

b. Real property.—This activity provides for the utilization of excess and the disposal of surplus real property, including national industrial reserve properties.

	1967	1968	1969
Total cost or estimate.....	$1,448,056	$1,501,700	$1,512,400

Program costs and staffing requirements for this activity are expected to remain at the 1968 level. Utilization and disposal accomplishments estimated for 1969 are comparable to those projected for 1968. The selling price of real property will be $80 million in 1968 and $75 million in 1969, consistent with the character and value of the property available for sale. At the same time, the acquisition cost of property sold is estimated to decline from $400 to $375 million. Fiscal year 1969 utilization transfers and other surplus disposal actions (donations, etc.) are expected to remain at the same level as 1968—130 and 250 properties, respectively. The number of properties sold will decline from 300 to 285 due to a decrease in the number of properties reported excess and available for sale. Properties on hand at the end of the year are estimated to be reduced by 50 with a related acquisition cost of $150 million.

A consolidated summary of the financing, workload, and proceeds for this activity is shown on exhibit G, tab G.

c. Personal property.—This activity provides for (a) utilization of excess personal property, thereby reducing new procurement; (b) donation of surplus personal property for public benefit purposes; (c) sale of surplus and exchange/sale personal property; and (d) rehabilitation of personal property owned by the Government to extend its useful life.

SUMMARY OF PERFORMANCE COST

	1967	1968	1969
(1) Utilization and donation.....	$3,033,072	$3,061,000	$3,081,300
(2) Sales.....	1,320,520	1,333,500	1,342,000
(3) Rehabilitation.....	656,317	686,200	691,700
Total cost or estimate.....	5,009,909	5,080,700	5,115,000

Although program costs and staffing are continued in 1969 at the 1968 level, sales and rehabilitation activity is expected to exceed the 1968 level as reflected in exhibit H, tab H. This projection is predicated on increased sales of motor vehicles, increased Federal agency use of rehabilitation facilities and expansion of commodity coverage. This increase in level of activity is expected to be accomplished by increased employee productivity, maximum use of facilities, and greater competition among small business firms performing rehabilitation under

contract. The acquisition cost of property rehabilitated is expected to rise from the 1968 level of $120 to $130 million in 1969. Unit cost of property rehabilitation operations is expected to decline 4 cents from 57 to 53 cents per $100 acquisition cost of property rehabilitated.

RESEARCH AND PLANNING

Mr. EVINS. Take a look at research and planning. This is up $9,500.

What research are you doing?

Mr. HARLAN. We have to do continuing research in several areas; the main one, I suppose, is in the marketing area.

We have to try to anticipate developments in the marketplace, both in order to take advantage of them, and also to avoid our programs being unduly disruptive in the market.

This means we have people who are constantly looking at developments in the market, contacting industry, the trade association and reading the publications and so on, to forecast what is going on in the marketplace.

Mr. JONAS. I guess analyst would be a better term than researcher, would it not?

Mr. HARLAN. Yes. We also have to do a lot of basic economic research in order to develop a disposal program, which we can get the approval of the Congress on.

In other words, you have to be able to establish that these things should and can be done.

Mr. MOODY. Without disrupting the normal channels of trade.

Mr. EVINS. We will try to keep the research costs down.

Mr. HARLAN. We are not asking anything but a Pay Act increase.

Mr. EVINS. Place in the record pages 20 and 21, Mr. Reporter.

(The pages follow:)

3. RESEARCH AND PLANNING

	Amount	Average employment		
		Central office	Field	Total
1968	$1,708,000	31.4	59.5	90.9
Change	+9,500			
1969	1,717,500	31.4	59.5	90.9

HIGHLIGHT

Provides program planning and coordination of all activities of the Property Management and Disposal Service. Develops long-range disposal plans for materials no longer required for stockpile objectives and coordinates plans with affected sources in industry and Government. Responsible for data collection and economic analyses of all factors bearing on stockpile materials—supply, demand, consumption, prices, and so forth. This activity is also responsible for the appraisal of excess and surplus real property as well as the coordination of regulations, standards, and methods governing such appraisals. (From "The Budget for 1969.")

JUSTIFICATION

	1967	1968	1969
Total cost or estimate	$1,474,886	$1,708,000	$1,717,500

The estimate provides funds and staffing at the 1968 level among other functions for the program planning and coordination of all activities of the Property Management and Disposal Service. An important function of this office is the development of new long-range disposal plans and the review and revision of existing plans for materials no longer required for stockpile objectives, and coordinating such plans, reviews, and revisions with affected sources in industry and Government. Disposal plan reviews and revisions are expected to increase from 38 in 1968 to 53 in 1969, and in-depth studies from 8 in 1968 to 10 in 1969.

This activity is also responsible for the collection of data, and economic analyses of all factors bearing on stockpile materials—supply, demand, consumption, prices, and so forth. These data and economic analyses form the basis of policy decisions made by management in regard to long-range disposal programs and in day-to-day implementation of sales programs, and are essential to insure that disposals are carried out in accordance with legislative mandates requiring that due regard be given to the protection of markets of producers, consumers, and processors, and the protection of the United States against avoidable loss.

In addition to the above functions this activity is also responsible for the appraisal of excess and surplus real and personal property, provides for the appraisal of public buildings in leases, sites, repair, and improvement and other related building programs for Government-owned or leased buildings, as well as for the coordination of regulations, standards, and methods governing such appraisals. These appraisals are made by staff personnel or under contract by qualified appraisers, subject to review by GSA. The estimate includes 32 positions and related resources transferred from the Public Buildings Service to the Property Management and Disposal Service in fiscal year 1967. This transfer consolidated GSA appraisal functions into a single service and provides maximum utilization of manpower resources. Also, it improves GSA's appraisal capability by allowing for interchange of appraisers on both acquisition and disposal activities. Fees of contract appraisers are financed from other accounts. Appraisal workload is reflected in the table below:

	1967	1968	1969
Number of staff appraisals	1,221	1,350	1,400
Number of contract appraisals	362	380	400
Total	1,583	1,730	1,800

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$1,052,800 for 99 positions distributed as follows:

	1967			1968			1969		
	Central office	Field	Total	Central office	Field	Total	Central office	Field	Total
Total permanent positions	36.0	61.0	97.0	34.0	65.0	99.0	34.0	65.0	99.0
Average employment	31.2	55.5	86.7	31.4	59.5	90.9	31.4	59.5	90.9

12 *Personnel benefits.*—$78,200; includes $68,700 for direct contribution to retirement fund, $6,000 for health benefits, and $3,500 for group insurance, in support of the above personnel.

21 *Travel and transportation of persons.*—$49,400; includes $43,500 for travel based on 1,611 days at $27 per day and $5,900 for motor pool services in connection with property appraisal and research and planning for strategic and critical materials.

22 *Transportation of things.*—$800; for movement of household goods in the transfer of personnel to new posts of duty.

23 *Rents, communications, and utilities.*—$91,000; $22,300 for postage and fees,

$59,800 for telephone and teletype services, and $8,900 to GSF for depreciation of administrative furniture and equipment.

24 *Printing and reproduction.*—$14,800; includes special report to program officials and coordinating agencies; inventory and disposal control reports, and technical publications and circulars.

25 *Other services.*—$424,100; includes $25,300 for ADP costs, $1,800 for health room charges and security investigations, $44,000 for payments to commercial contractors and GSF for office equipment repair, $8,100 for graphics, $11,900 for other miscellaneous services, and $333,000 for research and marketing contracts.

26 *Supplies and materials.*—$6,400; for supplies and materials used in normal administrative operations necessary to support this program.

SERVICE DIRECTION

Mr. EVINS. The next item is service direction. General direction is provided by the Commissioner and the 10 regional directors. You are asking for a $4,700 increase.

Is this the pay act increase?

Mr. HARLAN. That is it.

Mr. EVINS. I think the Commissioner is on top of his subject.

He knows the stockpile, and I hope he knows how to make a good deal in the sales.

ADMINISTRATIVE OPERATIONS

On the next page we have administrative operations. Is this not about the same?

Mr. JOHNSON. That is the same thing we mentioned before.

Mr. EVINS. Place the justification summaries for service direction and administrative operations in the record, Mr. Reporter.

(The pages follow:)

4. SERVICE DIRECTION

	Amount	Average employment		
		Central office	Field	Total
1968	$646,800	20.7	25.5	46.2
Change	+4,700			
1969	651,500	20.7	25.5	†6.2

HIGHLIGHT

"General direction over all programs assigned to the Property Management and Disposal Service is provided by the Commissioner and an executive staff, and in the regions by 10 regional directors who are responsible for carrying out program operations in these areas." (From the budget for 1969.)

JUSTIFICATION

Total cost or estimate

1967	$758,764
1968	646,800
1969	651,500

Funds and staffing are continued in 1969 at the 1968 level (substantially less than 1967) to provide direction, planning, control, and management of PMDS programs.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See activity data sheet)

11 *Personnel compensation and staffing.*—$539,800 for 54 positions distributed between central office and field as follows:

	1967			1968			1969		
	Central office	Field	Total	Central office	Field	Total	Central office	Field	Total
Total permanent positions	33.0	30.0	63.0	24.0	30.0	54.0	24.0	30.0	54.0
Average employment	28.7	28.4	57.1	20.7	25.5	46.2	20.7	25.5	46.2

12 *Personnel benefits.*—$40,000, includes $35,100 for direct contribution to retirement fund; $3,100 for health benefits, and $1,800 for group insurance.

21 *Travel and transportation of persons.*—$13,100, includes $12,200 for 420 travel days and $900 for motor pool services, in order for supervisory personnel in both central office and regional offices to provide direction, planning, control, and management of PMDS programs.

22 *Transportation of things.*—$900 for movement of household goods in the transfer of personnel to new posts of duty.

23 *Rents, communications, and utilities.*—$41,000; $6,200 for postage fees; $29,900 for telephone and teletype services; and $4,900 for depreciation of administrative furniture and equipment.

24 *Printing and reproduction.*—$1,900 for issuance of procedural and regulatory matter, special reports to program officials and interested agencies, procedures, handbooks and regulations, general use items such as standard forms and letterheads, and other administrative matter.

25 *Other services.*—$12,300, provides $1,300 for health room and security investigations; $3,800 for payments to commercial contractors and GSF for office equipment repairs; and $7,200 for other miscellaneous services.

26 *Supplies and materials.*—$2,500, provides for supplies and materials incident to administration of the programs.

5. Administrative Operations

HIGHLIGHT

This activity provides for administrative and staff support for property management and disposals programs financed under operating expenses, PMDS. The services described below are performed for the agency as a whole on a centralized and integrated basis and are funded by deposits or reimbursements from program appropriations and funds to which services are provided. Administrative operations supports the PMDS program as follows:

1. *Administration.*—Provides accounting and reporting, credit, insurance and related financial services including the cost of ADP services for accounting, payrolling, and invoice processing, budget, personnel administration, management systems, audits, investigative services, administrative and office services.

2. *Legal services.*—Performs all legal services in connection with (1) utilization of excess by transfer between Federal agencies, or disposal of surplus by sale, lease, donation or otherwise, of surplus real and personal property; (2) acquisition, rotation, beneficiation, storage, and disposal of metals, minerals and other materials for the national and supplemental stockpile; and (3) acquisition, storage, loan, lease or disposal of industrial equipment and machine tools under the National Industrial Reserve Act.

JUSTIFICATION

The costs of AO support for PMDS is expressed in its direct percentage relationship to the appropriation totals and comparative man-year equivalents as follows:

	1967	1968	1969
PMDS (thousands)	$27,008	$28,000	$30,500
Administrative operations support (thousands)	$1,769	$1,913	$2,027
Percent relationship	6.5	6.8	6.6
Man-year equivalents	140.9	147.5	153.2

The minor increase in 1969 is directly attributable to increased program volumes. However, the relationship is being held below that of 1968 in spite of additional cost of employee pay.

The magnitude of administrative support is indicated by the following selected statistics:

Selected workload statistics	1967	1968	1969
Vouchers processed	36,278	39,000	41,000
Billings prepared	34,215	35,000	35,800
Accounting documents processed	70,493	74,000	76,800
Personnel serviced and employees payrolled	1,399	1,405	1,426
Audits performed:			
Internal	46	37	39
Contract	32	33	35
Investigative cases	46	37	39
Civil rights cases	32	33	35
Security clearance requests	155	160	185
Special inspection		2	4

Note: Total administrative operations fund support on an integrated basis for all GSA programs is justified under the heading "Administrative Operations" in vol. III of GSA's congressional estimates.

UPGRADING AND STORAGE

Mr. EVINS. "National stockpile upgrading program." We have discussed this. There are six or eight items you are upgrading. Tab C shows you the material in storage, and the chart shows that the millions of short tons is beginning to level off.

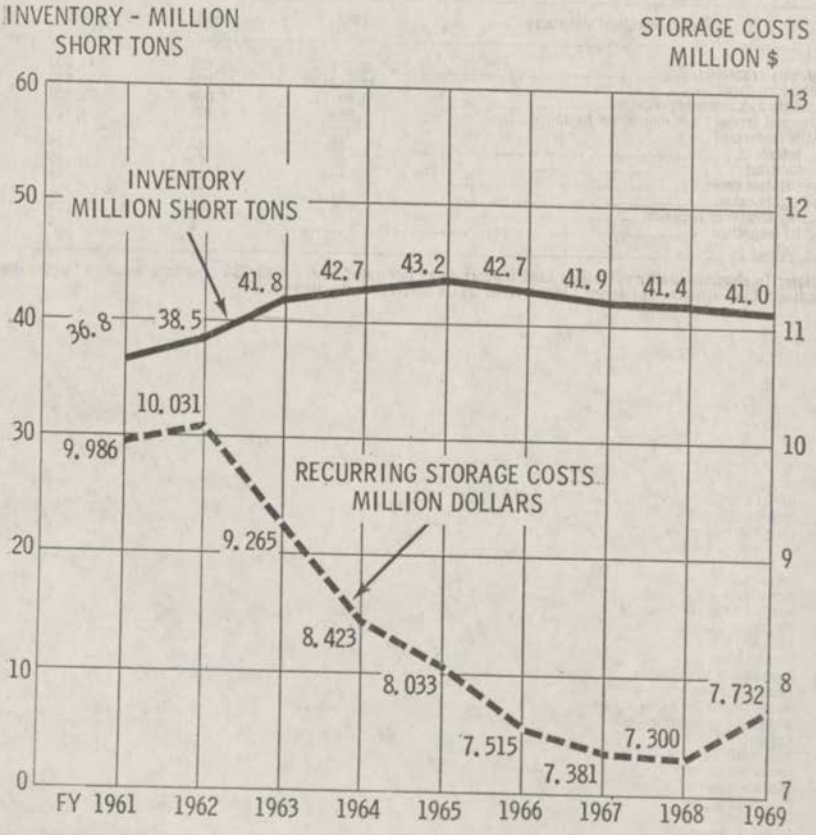
Mr. Reporter, place this chart, page III–30, into the record at this point.

(The chart follows:)

PROPERTY MANAGEMENT AND DISPOSAL SERVICE

YEAR END INVENTORY AND RECURRING STORAGE COSTS

NATIONAL AND SUPPLEMENTAL STOCKPILES



PROTECTION AND MAINTENANCE COSTS

Mr. EVINS. Tab D shows excess properties.

Gentlemen, if you want to buy any property, here are three properties for sale. In region 1 they have a naval depot in Massachusetts for sale.

They have one at Mitchell Air Force Base in New York for sale, and the first figure shows it is $41,000 and the next figure is $15,000.

Mr. HARLAN. These are the costs we have to pay out for protection and maintenance of the property while we are selling it.

Mr. EVINS. These are the costs for maintaining the property.

Mr. HARLAN. Just the protection and maintenance of the property.

Mr. MOODY. The reason the figure goes down substantially on Mitchell Field is that part of it has been sold.

Mr. EVINS. You do not list the prices, you just list the cost of maintaining it.

Do you do any painting around these places, to make them more attractive for sale?

Mr. MOODY. Very little.

GRENIER FIELD, MANCHESTER, N.H.

Mr. WYMAN. Mr. Chairman, one question. You have a P. & M. cost listed at $23,000 for Grenier Field at Manchester, N.H., but nothing for 1969. What is the status?

Mr. HARLAN. We are expecting to sell it in 1968.

Mr. WYMAN. Do you have any current information as to whether that is pretty close to being sold?

Mr. MORELAND. I think it is.

EXCESS, SURPLUS, AND NATIONAL INDUSTRIAL RESERVE PROPERTIES

Mr. EVINS. I believe we will place these items in the record. Put them in the record, Mr. Reporter.

(The pages follow:)

EXHIBIT D.—STATEMENT OF PROTECTION AND MAINTENANCE COSTS, EXCESS, SURPLUS, AND NATIONAL INDUSTRIAL RESERVE PROPERTIES

Name and location of property	P. & M. costs		
	1967	1968	1969
Region No. 1:			
Naval Ammunition Depot, Hingham, Mass.	$3,082		
Naval Ammunition Depot, Cohasset, Mass.	12,160		
Long Island fuel farm, Casco Bay, Portland, Maine		$15,000	
Grenier Field, Manchester, N.H.		23,000	
Region No. 2:			
Camp Kilmer, Middlesex County, N.J.	16,582		
Army Supply Depot, Philadelphia, Pa.	25,600		
Mitchel AFB, Hempstead, N.Y.	41,194	15,000	$15,000
Mayaguez Missile Guidance Annex, Las Mesas, P.R.	22,829		
Todd Shipyards, Hoboken, N.J.	9,500		
Fort Slocum, New Rochelle, N.Y.	23,000		
Pine Ford Acres housing project, Olmsted Air Force Base, Pa.	7,504		
Water filtration plant, San Patricio, P.R.	500	1,250	
Naval Supply Depot, Scotia, N.Y.		15,000	22,000
Wallabout housing project, Brooklyn, N.Y.		13,000	
Army depot, Schenectady and Voorheesville, N.Y.		18,700	25,000
New York Naval Shipyard, Brooklyn, N.Y.		48,000	
Henry Barracks Military Reservation, Cayey, P.R.		45,000	25,000
Military ocean terminal, Brooklyn, N.Y.		19,550	13,000
Fort Buchanan Military Reservation, San Juan, P.R.			34,000
Ramey petroleum annex, San Patricio, P.R.			5,000
Sampson Air Force Base, GSA/CD Depot, Romulus, N.Y.		3,000	
Region No. 3:			
VA (Mount Alto) Reservation, Washington, D.C.	22,244	15,000	5,000
National Training School for Boys, Washington, D.C.			10,000
Naval Air Test Center, Patuxent River, Md.			10,000
Region No. 4:			
Panthersville Honor Farm, Georgia	1,056		
Greenville Air Force Base, Greenville, Miss.	64,190		
VA center reservation, Jackson, Miss.	7,846		
Air Force Plant No. 74, West Palm Beach, Fla.			97,000
Miami Air Station, Dinner Key, Fla.			1,500
Quarantine Station, Fisher Island, Miami Beach, Fla.		1,000	

EXHIBIT D.—STATEMENT OF PROTECTION AND MAINTENANCE COSTS, EXCESS, SURPLUS, AND NATIONAL INDUSTRIAL RESERVE PROPERTIES—Continued

Name and location of property	P. & M. costs		
	1967	1968	1969
Region No. 5:			
Post office, Pekin, Ill	$120		
Post office, Bellaire, Ohio	100		
Biological laboratory, Northville, Mich	450	$900	
Bong AFB, Kansasville, Wis	500		
Camp Breckinridge, Morganfield, Ky	7,181	9,500	
AF plant No. 35, Washington Park, Ill	24,600		
Post office, Elkhart, Ind	195		
Fort Wayne, Detroit, Mich		22,000	
Rockville AF Station, Ind		17,000	
Camp Atterbury, Edingurg, Ind			$52,000
U.S. Army support center, Chicago, Ill			25,000
Post office, Richmond, Ky			500
Region No. 6:			
VA hospital reservation, St. Cloud, Minn	4,650	2,000	
Grand Rapids AF Station, Grand Rapids, Minn	10,780	14,000	
Oahe subdivision, Pierre, S. Dak	3,000	12,000	
Naval Ammunition Depot, Hastings, Nebr		15,900	
Badlands AF Range, S. Dak		1,000	1,000
Black Hills Army Depot, S. Dak			71,000
Region No. 7:			
Pyote AF Station, Pyote, Tex	1,875		
Headquarters support activity, New Orleans, La	5,960	4,000	2,600
Zapata AFB, Zapata, Tex	4,057	4,400	
Naval auxiliary Air Station, New Iberia, La	6,249	6,000	4,000
VA office building site, Houston, Tex	1,140		
Army Air Field, Eagle Mountain Lake, Tex		25,000	9,000
Eagle Pass AF Station, Eagle Pass, Tex		16,400	
Region No. 9:			
Naval facility, San Bruno, Calif	6,400		
Alcatraz Prison, Alcatraz Island, Calif	24,112	22,000	22,000
Mira Loma AF Station, Riverside, Calif	15,306		
Stead AFB, Reno, Nev	43,590	85,000	53,000
Richmond Shipyard, Calif	14,774	17,900	17,900
Tuberculosis sanitorium, Imperial County, Calif	1,326		
Kahanack estate, San Francisco, Calif	35		
Independence housing project, San Diego, Calif	4,009	50,900	50,900
Fort Weaver, Hawaii	1,240		
Norwalk district station No. 1, Santa Fe Springs, Calif		12,000	
Bethlehem Shipyard, Calif		50,000	
Preble-Sachem housing project, San Diego, Calif		1,000	1,000
Naval Net Depot, Tiburon, Calif		10,000	10,000
Warren Navy housing project, San Diego, Calif		1,000	1,000
Nike batteries LA-70 and LA-73, Los Angeles, Calif		6,600	6,600
Camp parks, Alameda County, Calif		30,000	35,500
Fort Mason, San Francisco, Calif		45,000	52,000
Cyane Navy housing project, San Diego, Calif			1,000
Manana National Guard site, Pearl City, Hawaii			600
Region No. 10:			
Magnolia Manor naval housing project, Seattle, Wash	5,258		
Larson AFB, Moses Lake, Wash		70,000	85,000
Port of Whittier, Alaska			12,000
Manchester annex, Manchester, Wash			6,000
Nike site No. 62, Kitsap County, Wash			300
Nike sites Nos. 32-33, Seattle defense area, Washington			300
Nike site No. 20, Seattle defense area, Washington			300
Nike battery No. 45, Fairchild defense area, Washington			500
Nike battery No. 87, Spokane, Wash			500
Total	[1] 444,194	[2] 784,000	[2] 784,000

[1] 39 properties.
[2] 40 properties.

REAL PROPERTY PROCEEDS

Mr. EVINS. Tab G is the financing, workload, and proceeds. You show a change of $5 million.

Explain this, please.

Mr. HARLAN. That is a decrease in what we expect to get in revenue, income from sales.

Mr. EVINS. Estimated in 1968 is $80 million, and for next year you estimate $75 million; so the price has gone down.

Mr. MOODY. We estimate we will have fewer properties for sale in 1969.

PERSONAL PROPERTY PROCEEDS

Mr. EVINS. This is a total of fewer properties for sale.

Here is the workload and accomplishments. You show on tab H your personal property summary.

Mr. MOODY. This is the one that relates our performance cost to proceeds and acquisition costs.

For example, our estimate in 1969 is $3.081 million, and we figure that costs us 31 cents per $100 of acquisition cost of property transferred or donated; and the same thing applies to our sales and property rehabilitation.

REAL PROPERTY DONATIONS

Mr. JONAS. Are you donating much real property?

Mr. HARLAN. Yes.

Mr. JONAS. Who gets most of it, State or local government?

Mr. HARLAN. I think most of it has gone to State educational institutions.

Mr. MOODY. And local.

Mr. HARLAN. It can also be local. We donated 157 properties in 1967 which had an acquisition cost of $145 million; and we calculated the current value to have been somewhere in the neighborhood of $26 to $30 million.

SURPLUS PROPERTY DISPOSAL LEGISLATION

Mr. EVINS. The surplus property disposal law provides that if the Federal Government declares no need for it, it is then the GSA's responsibility to advise all agencies to inquire as to whether or not they are interested in the property. If the response is negative, then it is made available to the State for educational or other purposes under the statute. If the State advises they are not interested, it is offered to the municipalities nearest there.

Mr. HARLAN. Pretty much simultaneously.

Mr. EVINS. If it is still negative, it is offered for sale to the public.

Mr. MOODY. If the State wants it for a use not involving a public-benefit discount, we will give them an exclusive right to buy it from us by negotiation at a fair market value.

Mr. HARLAN. In other words, if they want to buy it, they can purchase by negotiation or they can bid on it.

Mr. WYMAN. What happens if they do not find anybody to buy it?

Mr. MOODY. We don't have very many that we can't sell.

Mr. JONAS. You have a sale and you don't confirm the sale, and you readvertise.

Mr. MOODY. If we don't get what we think we are entitled to, we are not going to knock the price down without making a further effort.

Mr. JONAS. Then you can negotiate after you have advertised it one time, and you don't accept the high bid, and you do not have to advertise again; do you?

Mr. HARLAN. The law is very specific about the conditions under which you might negotiate.

If it does not fall into one of those categories, we just have to try to sell it competitively.

Mr. Moody. But the time could come when you could proceed as Mr. Jonas suggests.

Expenses, Disposal of Surplus Real and Related Personal Property

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimated	1969 estimated
	Program by activities:			
	1. Appraisers' fees and surveying	770	700	700
	2. Auctioneers' and brokers' fees	15	50	50
	3. Advertising	111	250	250
	Total program costs, funded [1]	896	1,000	1,000
	Change in selected resources [2]	−211		
10	Total obligations	685	1,000	1,000
	Financing:			
60	New obligational authority (appropriation) (permanent, indefinite, special fund)	685	1,000	1,000
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	685	1,000	1,000
72	Obligated balance, start of year	511	259	159
74	Obligated balance, end of year	−259	−159	−159
77	Adjustments in expired accounts	−21		
90	Expenditures	916	1,100	1,000
	Expenditures are distributed as follows:			
01	Out of current authorizations	441	1,000	900
02	Out of prior authorizations	475	100	100

[1] Excludes adjustment of prior-year costs, −$10,000.
[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $465,000 (1967 adjustment, −$10,000); 1967, $244,000; 1968, $244,000; 1969, $244,000.

OBJECT CLASSIFICATION
[In thousands of dollars]

		1967 actual	1968 estimated	1969 estimated
24.0	Printing and reproduction	18	25	25
25.1	Other services	667	975	975
99.0	Total obligations	685	1,000	1,000

Mr. Evins. You are asking for $1 million for expenses to dispose of surplus property, and this is for the contract appraisers, realty brokers, and auctioneers.

Mr. Johnson. That is at page 39.

Mr. Evins. Place that page in the record, Mr. Reporter.

(The page follows:)

	Amount
1968	$1,000,000
Change	0
1969	1,000,000

HIGHLIGHT

Appraisers, auctioneers, and brokers familiar with local markets are used to accelerate the disposal of surplus real and related personal propety. Fees of appaisers, auctioneers, and brokers and costs of advertising and surveying are paid out of receipts from disposals within each year in accordance with 40 U.S.C.A. 485(b). Also paid from such proceeds is the direct expense in connec-

tion with utilization of excess real and related personal property (68 Stat. 1051). Properties sold by auctioneers and brokers totaled nine in 1967 and are estimated at 15 in 1968 and 1969. (From the budget for 1969.)

JUSTIFICATION

The use of contract appraisers, realty brokers and auctioneers, and the payment of advertising and surveying costs as a means of accelerating the utilization and/or disposal of excess and surplus real property is expected to be continued in 1969 at the 1968 rate.

Distribution of obligations by major category follows:

	1967	1968	1969
Surplus property	$489,848	$800,000	$800,000
Excess property	195,313	200,000	200,000
Total	685,161	1,000,000	1,000,000
Obligations by activity:			
Appraisers' fees and surveying	542,669	700,000	700,000
Auctioneers' and brokers' fees	32,852	50,000	50,000
Advertising	109,640	250,000	250,000
Total obligations	685,161	1,000,000	1,000,000

Salaries and Expenses, Office of Administrator

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Executive direction	797	826	965
	2. Legislative and information services	265	278	281
	3. Business services	666	689	698
10	Total program costs, funded—obligations	1,728	1,793	1,944
	Financing:			
25	Unobligated balance lapsing	19		
	New obligational authority	1,747	1,793	1,944
	New obligational authority:			
40	Appropriation	1,747	1,747	1,944
44	Proposed supplemental for civilian pay act increases		46	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	1,728	1,793	1,944
72	Obligated balance, start of year	131	80	82
74	Obligated balance, end of year	−80	−82	−80
77	Adjustments in expired accounts	2		
90	Expenditures excluding pay increase supplemental	1,781	1,747	1,944
91	Expenditures from civilian pay act supplemental		44	2
	Expenditures are distributed as follows:			
01	Out of current authorizations	1,652	1,712	1,863
02	Out of prior authorizations	129	79	83

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	1,455	1,509	1,647
11.3	Positions other than permanent	10	5	6
11.5	Other personnel compensation	1	1	1
	Total personnel compensation	1,466	1,515	1,654
12.0	Personnel benefits	108	115	127
21.0	Travel and transportation of persons	23	34	34
	Payment to interagency motor pools	4	4	4
11.0	Transportation of things	3	2	2
23.0	Rent, communications, and utilities	63	62	62
24.0	Printing and reporduction	13	13	13
25.1	Other services	30	30	30
25.2	Services of other agencies	3	3	3
26.0	Supplies and materials	15	15	15
99.0	Total obligations	1,728	1,793	1,944

PERSONNEL SUMMARY

Total number of permanent positions	131	133	141
Full-time equivalent of other positions	2	1	2
Averange number of all employees	128	127	134
Average GS grade	9.4	9.5	9.5
Average GS salary	$11,091	$11,819	$12,050

Mr. EVINS. The next item is the Office of the Administrator. We know what the Administrator does. He has a lot of responsibility.

Place in the record pages 41 and 42, Mr. Reporter.

(The pages follow:)

FUNCTIONAL STATEMENT FOR GENERAL ITEMS

This area of the budget covers programs which are not delegated to any of the five services of the Agency since they are agencywide, of special nature, or consist of unified services to all GSA operations and other agencies and commissions.

Included are items covering (1) the Administrator and his top assistants, financed by the appropriation "Salaries and expenses, Office of Administrator"; (2) pensions, office staff and facilities for former President and a pension for a widow of a former President financed by "Allowances and office facilities for former Presidents"; (3) refund and rebate payments due World War II contractors financed by "Refunds under Renegotiation Act"; (4) the integrated staff organization which provides financial, administrative, investigative, legal, and other staff services for all programs of GSA, funded by deposits or reimbursements from the benefiting appropriations and funds to the administrative operations fund; (5) data processing services which provide optimum automation to program paperwork, financed through the ADP working fund by reimbursements from programs serviced; (6) the liquidation of certain assets of the Reconstruction Finance Corporation; and (7) operation of printing and duplicating plants financed by reimbursements to the working capital fund.

Summary reconciliation of 1969 estimate to amounts for 1968

1968 appropriation in annual act	$1,747,000
Proposed supplemental for Pay Act increases	+46,000
Total for 1968	1,793,000
Increase in executive direction to provide deputy regional administrators in the four larger regional offices	+123,000
Net additional cost of 1967 Pay Act	+28,000
1969 estimate	1,944,000

ANALYSIS BY ACTIVITIES

Activities	1968	Increases	1969
1. Executive direction	$826,000	$139,000	$965,000
2. Legislative and information services	278,000	3,000	281,000
3. Business services	689,000	9,000	698,000
Total	1,793,000	151,000	1,944,000

Allowances and Office Facilities for Former Presidents

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Allowances and pensions	60	60	60
	2. Office staff and facilities	139	191	207
	Total program costs, funded [1]	199	251	267
	Change in selected resources [2]	−2		
10	Total obligations	197	251	267
	Financing:			
25	Unobligated balance lapsing	38		
	New obligational authority	235	251	267
	New obligational authority:			
40	Appropriation	235	235	267
44	Proposed supplemental for civilian pay act increases		16	
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	197	251	267
72	Obligated balance, start of year	9	7	43
74	Obligated balance, end of year	−7	−43	
77	Adjustments in expired accounts	1		
90	Expenditures excluding pay increase supplemental	200	200	309
91	Expenditures from civilian pay act supplemental		15	1
	Expenditures are distributed as follows:			
01	Out of current authorizations	190	208	267
02	Out of prior authorizations	10	7	43

[1] Includes capital outlay as follows: 1967, $2 thousand; 1968, $2 thousand; 1969, $2 thousand.
[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $2 thousand; 1967, $0; 1968, $0; 1969, $0.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	GENERAL SERVICES ADMINISTRATION			
11.5	Personnel compensation: Other personnel compensation	83	135	150
12.0	Personnel benefits	6	8	9
23.0	Rent, communications, and utilities	29	29	29
25.1	Other services	4	5	5
26.0	Supplies and materials	13	12	12
31.0	Equipment	2	2	2
	Total obligations, General Services Administration	137	191	207
	ALLOCATION TO TREASURY DEPARTMENT			
13.0	Benefits for former personnel	60	60	60
99.0	Total obligations	197	251	267

Mr. EVINS. The next item is "Allowances and office facilities for former Presidents." We only have two former Presidents, and the law provides for $25,000 per annum to each of the former Presidents and $10,000 for the widow of a former President, and these items are paid for by the GSA. The staff is selected by the former Presidents.

This is a very modest amount for a man who served his country.

We will place pages III–56 and III–57 into the record at this point, Mr. Reporter.

(The pages follow:)

SUMMARY RECONCILIATION OF 1969 ESTIMATE TO 1968 FUNDS

1968 appropriation in annual act	$235,000
Proposed supplemental for pay act increase	16,000
Total for 1968	251,000
Increase in 1969: Net additional cost of 1967 Pay Act	16,000
1969 estimate	267,000

ANALYSIS BY ACTIVITIES

Activities	1968	Increase	1969
1. Allowances and pensions	$60,000		$60,000
2. Office staff and facilities	191,000	$16,000	207,000
Total	251,000	16,000	267,000

	Amount
1968	$251,000
Change	+16,000
1969	267,000

GENERAL STATEMENT

"This appropriation provides for allowances, office staff, furnished space, mailing privileges, communications, and office supplies and material for two former Presidents and a pension for a widow of a former President." (From the budget for 1969.)

APPROPRIATION LANGUAGE

For carrying out the provisions of the act of August 25, 1958, (72 Stat. 838), [$235,000] *$267,000: Provided*, That the Administrator of General Services will transfer to the Secretary of the Treasury such sums as may be necessary to carry out the provisions of sections (a) and (e) of such act.

JUSTIFICATION

1. *Allowances and pensions.*—$60,000. Provides for two former Presidents at $25,000 per annum, and a widow of a former President at $10,000 per annum. The $60,000 will be transferred to the Secretary of the Treasury who is responsible for making the payments under Public Law 85–745.

2. *Office staff and facilities.*—$207,000. These items are paid for directly by GSA. The staff is selected and compensation fixed by each former President who also specifies the location of office space and is consulted as to equipment and furniture requirements. Provision is made for postage fees, local and long distance telephone service, telegraph and cablegram; office supplies and materials; and miscellaneous services.

The increase of $16,000 over 1968 reflects the full-year cost of staff salaries as a result of the Postal Revenue and Federal Salary Act of 1967.

Mr. JONAS. Mr. Chairman, would you mind turning back to 43 for a minute?

I notice you do have your planning to put in some deputy regional administrators, four. Who has been doing their work heretofore?

Mr. MOODY. These are the four of our larger regions, where we have recently been able to improve the pay level of the Regional Administrator, and we believe that the jobs these men do are sufficiently large and complicated to require the assistance of a deputy.

Mr. JONAS. You are not adding personnel, but upgrading one of your people in each of these regions; or are you bringing in new people?

Mr. MOODY. I have to tell you, Mr. Jonas, we will add these positions. The job heretofore has been filled on a sort of "doubling in brass" basis. One or the other principal assistants have usually assisted him, but the operations in these four regions have now gotten to the place where that man cannot do his own job well, and also assist the Regional Administrator in carrying out his responsibilities. So we will be adding these four jobs.

Mr. JONAS. Where will you get a deputy?

Will you bring him up from below? Will you upgrade somebody?

Mr. MOODY. We would hope to bring him up from within.

Mr. JONAS. That would leave vacancies all down the line.

Mr. MOODY. Which will be filled up from the bottom.

Mr. JONAS. I would think, to be a deputy to a Regional Administrator would require somebody with experience.

Mr. MOODY. We would try to find such a man from within our organization. We have a good program in GSA to evaluate our people who show executive capabilities.

Mr. JONAS. You figured that increased cost would be $123,000?

Mr. MOODY. Yes, sir.

Mr. JONAS. It would be four new people.

Mr. JOHNSON. Four new professionals and four secretaries.

Mr. MOODY. It would be a total of eight.

Mr. JONAS. How did you get by the Bureau of the Budget with that?

Mr. JOHNSON. We justified this item to the Bureau of the Budget strictly on the increased workload within the four regions. It has grown considerably over a period of time, and one man simply cannot handle it alone.

Mr. BOLAND. What are the four regions?

Mr. MOODY. Kansas City, Fort Worth, Washington, D.C., and San Francisco.

Expenses, Presidential Transition

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
10 Office staff, services and facilities (costs—obligations) (object class 92.0)			900
Financing:			
40 New obligational authority (appropriation)			900
Relation of obligations to expenditures:			
71 Total obligations (affecting expenditures)			900
90 Expenditures			900
Expenditures are distributed as follows:			
01 Out of current authorizations			900

Mr. Evins. Gentlemen, there is a little act of Congress that the President shall include in his budget to the Congress a proposed appropriation for carrying out the purposes of the act of presidential transition.

Mr. Talcott. It may not be enough this year.

Mr. Evins. We may not need it at all.

However, the law says the President must include it in the budget.

You understand that language, and the President and the Bureau of the Budget are carrying out the mandate of the Congress. You may declare that surplus next year and recapture it.

Mr. Talcott. Did we have anything left over last time?

Mr. Johnson. In 1965, we had appropriated $400,000 for this purpose, and we used $72,681 for the newly elected Vice President.

Mr. Evins. GSA always does a good job, regardless of who is our President.

Administrative Operations Fund

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1967 actual	1968 estimate	1969 estimate
Program by activities:			
1. Administration	20,413	22,431	23,593
2 Legal services	1,787	1,907	1,948
Total program costs, funded	22,200	24,338	25,541
Change in selected resources [1]	−12	3	
10 Total obligations	22,188	24,341	25,541
Financing:			
11 Receipts and reimbursements from: Federal funds:			
Limitation	−12,512	−13,200	−14,165
Nonlimitation	−10,131	−11,141	−11,376
25 Unobligated balance lapsing	455		
New obligational authority			
Relation of obligations to expenditures:			
10 Total obligations	22,188	24,341	25,541
70 Receipts and other offsets (items 11 to 17)	−22,643	−24,341	−25,541
71 Obligations affecting expenditures	−455		
72 Obligated balance, start of year	1,416	780	980
74 Obligated balance, end of year	−780	−980	−1,080
77 Adjustments in expired accounts	−16		
90 Expenditures	164	−200	−100
Expenditures are distributed as follows:			
02 Out of prior authorizations	164	−200	−100

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1966, $93,000 (1967 adjustment, −$11,000); 1967, $70,000; 1968, $73,000; 1969, $73,000.

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	15,927	17,817	18,765
11.3	Positions other than permanent	191	101	95
11.5	Other personnel compensation	179	200	200
	Total personnel compensation	16,296	18,118	19,059
12.0	Personnel benefits	1,218	1,444	1,517
13.0	Benefits for former personnel	90		
21.0	Travel and transportation of persons	155	188	278
	Payment to interagency motor pools	22	22	22
22.0	Transportation of things	29	29	29
23.0	Rent, communications, and utilities	735	752	752
24.0	Printing and reproduction	168	169	169
25.1	Other services	3,236	3,380	3,474
25.2	Services of other agencies	77	77	77
26.0	Supplies and materials	162	162	163
99.0	Total obligations	22,188	24,341	25,541

PERSONNEL SUMMARY

Total number of permanent positions	1,888	1,955	1,987
Full-time equivalent of other positions	47	24	21
Average number of all employees	1,804	1,875	1,931
Average GS grade	8.1	8.3	8.3
Average GS salary	$9,100	$9,817	$10,022
Average salary of ungraded positions	$6,041	$6,081	$6,081

Mr. EVINS. The administrative operations fund, tell us about this, Mr. Administrator.

Mr. MOODY. I would like to ask Mr. Johnson to speak to the details of this request.

Mr. EVINS. This is the program designed to provide effective professional capability in the specialized fields of legal advice and assistance, program and policy planning, budgetary and financial management, organizational and program management appraisal, personnel management, and other related administrative and management services.

Mr. JOHNSON. Mr. Chairman, as Mr. Moody said, it is basically a fund from which we finance the administrative expenses of this agency.

GSA, unlike most Federal agencies, has all of its administrative activities fully centralized in this one fund.

There is no counterpart in any of our services.

For instance, there are no budget personnel in any of the services you have been over. There are no financial personnel in our services.

This fund provides common administrative services to all components of GSA, all the way from mail and messenger service to budget and finance.

Mr. EVINS. You draw on this fund for all and any administrative expenses?

Mr. JOHNSON. That is right.

Mr. EVINS. This is the appropriation for the operation of the administrative functions of GSA. Instead of itemizing, this is the one item for all administrative expenses.

Mr. JOHNSON. Yes, sir; no appropriations are made to the fund but all of the operating services reimburse the fund for services rendered.

INCREASE IN FUND REQUIREMENTS AND ADDITIONAL WORKLOAD

Mr. EVINS. How much has the fund gone up? It was $24 million last year, and you are now asking for $25.5 million.

Mr. JOHNSON. That is the total activity, and the increase is justified, Mr. Chairman, on a pure workload basis.

Mr. EVINS. What is the budget for your office in 1967?

Mr. JOHNSON. In 1967 it was $22.6 million.

Mr. EVINS. It has been going up about $2 million a year.

Mr. JOHNSON. $1.7 million from 1967 to 1968, sir, and less than that to 1969.

AO EMPLOYMENT IN RELATION TO GSA EMPLOYMENT

Mr. MOODY. There is an interesting table at the bottom of III–62, which shows the relationship of the growth in the administrative operations to the growth in total GSA employment. It shows in 1957, for example, that these activities involved 6.4 percent of GSA's total employment but in 1969 the percentage will be only 4.3.

Mr. JOHNSON. We have decreased this percentage by 2.1, during the period that GSA's total employment has gone up 75 percent.

Mr. EVINS. The work has gone up. The personnel has gone up, but the percent of administrative expense, you insist, is declining somewhat.

COMPARISON OF UNIT COSTS WITH GOVERNMENTWIDE AVERAGE

Mr. MOODY. The rate of growth in the administrative operations fund is below the rate of growth in our other activities.

Mr. JOHNSON. Mr. Chairman, we cross-check our own production cost in this area against other agencies' experience. Our cost, for instance, of processing a personnel action, to put a man on the payroll or take him off, is $4.49. The Government-wide average is $9.15.

To maintain our personnel files, GSA cost is $1.28 per employee, compared to a Government-wide average of $2.52.

We compare GSA unit cost against other agencies' cost religiously to make sure we are performing our activities in this at the lowest possible cost consistent with sound management.

Mr. MOODY. This high degree of centralization of administrative operations is unique in government. We think this is a very satisfactory way of handling these functions.

INCREASED WORKLOAD

Mr. EVINS. You state that to further underscore the growth of GSA's substantial program, to which administrative operations support is essential, there is listed below the increase in workload of some of the more significant program areas in the 10-year period from 1957 to 1967, during which the administrative operations fund has been in effect. Stores stock shipments: up from $116 million to $527 million, or an increase of 352.6 percent.

Your building management space cost has gone up from $187.5 to $409.5 million, or a 118.4-percent increase.

Your disposal of strategic materials; one item here is personal property, which has gone up from $2 to $58.9 million, or a 2,845-percent increase.

Disposal of strategic materials is up 6,000 percent.

Mr. WYMAN. Mr. Chairman, that is going to go up, up, up, if Vietnam gets over with soon. You will have an awful lot to dispose of.

Off the record.

(Discussion off the record.)

Mr. EVINS. Place this chart in the record, Mr. Reporter.

(The chart follows:)

To further underscore the growth of GSA's substantive programs for which AO support is essential, there are listed below the increase in workload of some of the more significant program areas in the 10-year period (1957-67) during which the administrative operations funds has been in effect.

[Dollar amounts in millions]

	1957	1967	Percent increase
FSS:			
Stores stock shipments	$116.4	$526.8	352.6
Total procurement volume	$635.3	$2,046	222.1
PBS:			
Square feet of space operated	103.5	190.9	84.4
Buildings management fund program costs	$187.5	$409.5	118.4
Construction and repair and improvement obligations	$51.3	$153.6	199.4
PMDS:			
Disposals of strategic materials	$7.6	$466.9	6,043.4
Sales of surplus property:			
Real property	$27	$344	1,174.1
Personal property	$2	$58.9	2,845.0
Transfers and donations (personal property)	$296	$929.4	214.0
TCS:			
Motor pools in operation (number)	22	97	340.9
Sales volume	$3.7	$47.7	1,189.2
Communication service sales	$15.5	$88.3	469.7
NARS: Records administered in regional records centers (thousand cubic feet)	3,888	7,952	104.5

These program increases have an impact on all elements of staff services. Several of the directly affected workload factors are listed in the following table. Constant improvement in systems, procedures, and employee efficiency, and optimum use of data processing have allowed us to absorb these workload increases and continue to reduce unit costs.

	Production per man-year			
	1957	1967 actual	1969 estimate	1969 increase from 1957
Vouchers	2,350	7,021	7,180	4,830
Billings	2,178	5,242	5,527	3,349
Accounting documents	3,018	17,291	18,430	15,412
Personnel ratio	1:156	1:169	1:163	7

As an example of personnel and dollar savings, conversion of the productivity increases for vouchers (above) to empolyee requirements shows that in 1969 GSA will need about 272 man-years to process 1,950,000 vouchers. Using the 1957 man-year production rate of 2,350 would have required 843 man-years, or 571 more than the 272 projected. This alone represents a productivity savings over 1957 in excess of $3.7 million.

The estimate for 1969 includes $970,700 for total pay costs as a result of the Postal Revenue and Federal Salary Act of 1967.

CHANGE IN FUNDING

Mr. EVINS. That is very commendable.

You actually go up about $2 million, but you show a $2 million decrease in your appropriation language. I want you to teach us how to do this.

Mr. JOHNSON. This is a direct result of a simple change in funding to be consistent with our accounting system approved by the Comptroller General. It has to do with how we account for the cost in our buildings program.

Prior to July 1, 1967 we were charging our costs of handling all public buildings matters directly to the OE–PBS appropriation without running it through the Buildings Management Fund.

We account for these expenses as a part of our buildings management cost in order to accurately determine the unit cost, within that fund.

What this does simply, in the Administrative Operations Fund to shift this activity from the limitation to nonlimitation category.

It does not change our total activity in the fund. It just shifted the accountability for these transactions between two categories.

Mr. EVINS. What are some of these costs?

Mr. JOHNSON. Personal management, legal, finance, budget, administrative services, and so forth.

Mr. EVINS. We understand these administrative items. What did you transfer again to building management?

Mr. JOHNSON. The cost of providing administrative services in connection with our Buildings Management Fund activities.

Mr. EVINS. The cost for those services that are attributable to building management?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. Not under administrative.

Mr. JOHNSON. That is right.

It is a perfection of our financial structure.

PRODUCTIVITY TRENDS—ACCOUNTING DOCUMENTS

Mr. EVINS. Explain this chart without putting it into the record. This is some more of your breakdown for the Office of the Administrator.

Mr. JOHNSON. What we are displaying here, Mr. Chairman, is a comparison of unit costs over a time period. In other words, we are presenting unit cost in each of the fiscal years shown, related to our volume of documents the man-years utilized to carry out this activity and the man-years saved from productivity increases.

Every time we handle a billing or paying document through a fiscal system, this takes a certain unit of workload.

What we have been able to do is, by utilization primarily of the computer systems, is to automate a lot of simple clerical transactions involved in handling billing and accounting documents so that we can handle more volume with fewer people.

OFFICE OF MANAGEMENT INVESTIGATION AND REVIEW

Mr. EVINS. Office management investigations and reviews. You have an increase of 32 jobs here from 210 in 1968 to 242 in 1969.

The Office of Management Investigations was created to provide additional capability and a broader approach in the direction of what is commonly referred to as "management audits and reviews," as envisaged by the Comptroller General.

Why do you need 32 more jobs?

Mr. MOODY. This is the activity we had a little discussion on yesterday morning. While this function is organizationally located in Mr. Johnson's office. It is, essentially, an extension of the eyes and ears of the Administrator.

Previously, we looked entirely to our service and staff heads for reports as to the results of their program operations. Most of our information as to how well they were doing on the programs came to the Administrator from the program heads. This function gives us the capability for an independent check.

Mr. EVINS. Was this created by Executive order?

Mr. MOODY. No, sir. This function has always existed to some degree in GSA. Mr. Knott and I, after long and careful consideration of the subject and extensive discussions with Comptroller General Staats, decided we were not putting enough resources in this effort in view of the magnitude and complexity of GSA's activity. We needed an independent capability to be certain that things were going the way they should go and that all programs were being accomplished in the best possible way with complete integrity.

Mr. EVINS. This is a braintrust office.

Mr. MOODY. This is a system of counterchecks, an independent look at how every program is going.

Mr. EVINS. All under Mr. Johnson?

Mr. MOODY. Technically under Mr. Johnson, but responsible directly to the Administrator.

Mr. EVINS. Do you anticipate the addition to this staff to be reflected in the other improvements and savings in the whole operation of GSA?

Mr. MOODY. I certainly do.

Mr. EVINS. You point out again the GSA functions and size have materially increased in the past 10 years. The PBS design and construction has increased.

In the past 10 years, overall GSA employment has increased approximately 42 percent, while the size of the audit staff has declined 10 percent.

Mr. Reporter, place all of this material in the record. That is pages III–74 through III–77.

(The pages follow:)

1. ADMINISTRATION

	1967	1968	1969
(b) Office of Management Investigations and Review:			
Positions	170	210	242
Average employment	153.6	192.5	228.5
Performance cost (in thousands)	$2,078	$2,791	$3,330

Audit, investigation, inspection, and evaluation functions for all of GSA have been consolidated into the Office of Management Investigations and Review under the Assistant Administrator for Administration. The change was made to facilitate the reorientation and strengthening of the functions to employ a preventive rather than an after-the-fact approach to these activities; to incorporate the various disciplines into a single comprehensive program operating on an integrated basis; to streamline auditing and investigating techniques; and to reduce the administrative and clerical cost of separated audit, investigation, inspection, and evaluation functions.

Historically, audit in GSA has been directed toward the verification of financial records and reports, and investigations toward the followup of complaints. The Office of Management Investigations and Review was created to provide additional capability and a broader approach in the direction of what is commonly referred to as management or operational audits and reviews as envisioned by the Comptroller General. GSA is endeavoring to combine several related disciplines to study and investigate all operations with a view toward promoting greater efficiency, economy, and better operating performance.

The principal objectives of the Office of Management Investigations and Review are to provide top management with an independent and objective review and appraisal of all programs and activities on a systematic and comprehensive basis and to bring management problems to their attention early so that corrective action may be initiated. The function serves top management by locating opportunities for eliminating waste and inefficiency; recommending improvements in plans, policies, procedures, and organizational structure; providing independent evaluations on performance by individual and organizational units; determining compliance with applicable statutory and other legal requirements; testing for existence of unauthorized, fraudulent, or otherwise illegal actions, identifying potential trouble spots in operations; and determining that assigned responsibilities and planned objectives are being carried out in the manner and with the results intended. The traditional functions of audit and investigation will continue to be performed. Financial records and reports will still be verified; contractors' records as to cost incurred will still be examined; and investigations will still be made of complaints, civil rights violations, employee misconduct, and thefts.

The 1969 estimate provides additional funds for this redirected effort. The increases in both personnel and dollars are significant. As these amounts are considered, it is important to note that GSA's functions and size have materially increased in the last 10 years but the size and cost of audit and investigative services has stayed fairly constant. For example, Federal supply procurements have tripled in volume. PBS design and construction increased tenfold from 1956 to 1966. In this same period the number of GSA motor pools increased eight times and the number of vehicles 25 times. In the past 10 years, overall GSA employment has increased approximately 42 percent while the size of the audit staff declined 20 percent.

With an increase in the number of professional people and an increase in the number of audits, inspections, and investigations, the cost of travel also increases. Since 75 percent of the audit effort in the past was devoted to the verification of financial records and reports, much of the audit effort has been performed at the GSA regional offices where auditors are permanently located. With an expanded concept of audit and inspection operations, it is necessary for the auditors, investigators, and inspectors to travel to the numerous locations where GSA performs its operations. Most of GSA's small activities have not been audited or inspected in the past. The reorientation of the audit and investigative functions, together with increased coverage of GSA's farflung activities, will provide an aggressive management tool.

The most significant workload statistics follows:

	1967	1968	1969
Inspections		10	22
Audits:			
Internal	145	155	183
Contract	74	86	102
Investigations:			
Investigative cases	659	525	550
Civil rights cases	457	475	500
Security clearance requests	5,796	6,000	6,300

The 1969 estimate provides for a 32-position increase over 1968.

Seven additional positions are requested for top direction, planning, scheduling, and supervision of this consolidated management review activity as well as the coordination of the efforts of its individual components. It includes also a provision for the establishment of a recruitment program as well as the development and direction of training programs to retain and update the skills of the staff.

Within this area the inspections and evaluations effort is designed to perform probes of GSA functions, operations, and activities. Its mission is to search for weaknesses at the site of major operations nationwide with the goal of preventing rather than merely detecting such deficiencies. The inspections staff is a small nucleus that provides the planning and supervision and draws professionals from the investigations and audit staffs to form its survey teams. Survey teams are comprised of as many disciplines as are required.

Eighteen new positions are requested for a revitalized and updated internal audit function, expanded beyond its former dual role of performing financially oriented audits and/or emergency type reviews. The internal audit staff will be expanded in terms of skills as well as quantity with the addition of staff with other than only accounting backgrounds to provide a broader and more flexible base for operations. This flexible staff will allow the expansion of internal audit review into not only major agency operations but into many meaningful and heretofore seldom reviewed areas. Systematic, intensive internal audit reviews will be initiated in a depth and scope heretofore unobtainable.

An increase in staff of seven over fiscal year 1968 recognizes the rapidly developing requirements for contract audit assistance to GSA contracting officials in all areas of contracting.

The additional contract audit workload consists of (1) requirements for substantial audit work in connection with preaward review; the General Accounting Office has insisted on adherence to requirements for audit services in this highly complex area as expressed in the Truth-in-Negotiations Act, which have been incorporated into the Federal procurement regulations; (2) added emphasis on requirements that contract auditors must review and approve requests for payments under cost-type contracts and approve all progress payments where the basis of contractors' requests are incurred costs; and (3) increased audit reviews made under price reduction clauses in contracts. In addition to the new audit situations mentioned above, contract audit effort must be continued in the areas of cost-type contracts, contract terminations, price redeterminations, and other claims and financial representations.

It is anticipated that the increased investigation workload and increased requirement to provide staff for surveys and inspections contemplated in 1969 can be performed with existing staff. While this function is and will continue to be concerned with investigating unauthorized, fraudulent, or otherwise illegal actions in determining compliance with statutory and other legal requirements, its primary thrust is being diverted to prevention. Among actions taken to implement this change is the elimination of the requirement that interviews be conducted on each theft of personal property regardless of value. Time saved is being used to determine whether patterns of theft exist, and if so, that appropriate preventative measures are taken. A major program has begun to survey physical security at 150 locations where stockpile materials are stored to determine weaknesses and prevent theft. It is anticipated that through careful planning and scheduling investigative manpower will be able to handle the increased investigative workload.

LEGAL SERVICES

Mr. EVINS. You have a lot of workload statistics.

Mr. Reporter, place in the record III–84 through III–86, pertaining to legal services.

(The pages follow:)

2. LEGAL SERVICES

	Amount	Average employment		
		Central office	Field	Total
1968	$1,902,700	77.9	52.6	130.5
Change	+45,400	−.5		−.5
1969	1,948,100	77.4	52.6	130.0

JUSTIFICATION

The Office of General Counsel (1) directs, coordinates, and performs all legal services within GSA; (2) prepares legislation proposed by GSA; (3) furnishes legal advice on and reviews reports on other legislative proposals; (4) participates in the development of agency policy and assists in the accomplishment and coordination of program objectives consistent with established policy.

These functions are performed under the direction of the General Counsel in the central office and in each of the 10 regions as set forth below.

	1967	1968	1969
Positions	138	143	143
Average employment	125.9	130.5	130
Performance cost (thousands)	$1,788	$1,903	$1,948

This activity, in the central office and in each of the 10 regions, performs the foregoing services for the Staff Offices and Services in their accomplishment of program objectives including the design, construction, management, maintenance, operation, repair, and improvement of federally owned and leased buildings; supply management including procurement and distribution; coordinating and providing for the economic and efficient purchase, lease, and maintenance of automatic data processing equipment by Federal agencies; utilization and disposal of excess and surplus real and personal property; transportation, communications, and utility matters; disposal of metals and minerals from the national stockpile which were acquired for Government use or resale; archival and records management; and financial and administrative management of the agency. The central direction of the GSA civil rights program is also currently funded within this activity of the AO fund.

In addition to the services being performed for GSA staff offices and services, the Office of General Counsel provides legal services to Presidential commissions and committees, as well as other small Federal agencies and activities on a reimbursable basis, based upon mandates contained in Executive orders or law and pursuant to agreements between GSA and the head of the agency or activity.

Service workload indicators as shown on page III–63 relate directly to the demand for corresponding legal services. The increased program workload in 1969 calls for corresponding increased legal services. The increased demand for legal services will generally be met through greater manpower utilization and improved management procedures.

The enactment of Public Law 89–306 on October 30, 1965, has increased and will continue to increase the legal workload since it provided increased GSA responsibility for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies, and the operation of the ADP revolving fund. The provisions of this law are being administered pursuant to the policy and fiscal guidance of the Bureau of the Budget.

The recent revision of the "public information" section of the Administrative Procedure Act (5 U.S.C. 552), which provides much broader rules for making information available to members of the public unless it comes within specific categories of matters which are exempt from public disclosure, has in-

creased and will continue to increase the demand for legal services to determine which official records may be released.

There has been and there will continue to be a concerted effort by the Office of General Counsel not only to minimize the total number of employees, but also to keep the ratio of professional employees to administrative and stenographic personnel as high as possible.

EXPLANATION OF DISTRIBUTION BY OBJECTS

(See Activity Data Sheet)

11 *Personnel compensation and staffing.*—$1,688,900 for 143 positions distributed as follows:

	1967	1968	1969
Central office	84.0	88.0	88.0
Field	54.0	55.0	55.0
Total positions	138.0	143.0	143.0
Average employment	125.9	130.5	130.0

12 *Personal benefits.*—$133,800. Includes $109,800 for retirement contributions, $15,000 for health benefits, and $9,000 for group insurance.

21 *Travel and transportation of persons.*—$18,300. Provides $18,000 for 667 days travel at $27 per day incident to appearances at hearings before State regulatory bodies in traffic and public utility cases, inspection of regional legal activities, and attendance at conferences and trials; and $300 for travel by motor pool.

22 *Transportation of things.*—$2,200 for shipping records and similar items, and transportation of household goods in connection with transfers of personnel.

23 *Rents, utilities, and communications services.*—$39,200. Provides $31,100 for telephone and teletype services, $1,200 for equipment rental and $6,900 payment to GSF for depreciation of administrative equipment.

24 *Printing and reproduction.*—$9,900 for printing and reproduction and issuance of procedures, manuals, and other miscellaneous duplicating requirements.

25 *Other services.*—$36,300. Provides $15,000 for payment to data processing working fund and $21,300 to GSF for maintenance cost of office equipment, repair of furniture, reimbursements to Public Health Service for health room services and to the Civil Service Commission for security clearances, and other various services.

26 *Supplies and materials.*—$19,500 for the purchase of law books required by the library and administrative office supplies and materials.

Mr. EVINS. The Office of the General Counsel has how many personnel, 130 total?

The Office of the General Counsel directs, coordinates, and performs all legal services within GSA; prepares legislation proposed by GSA; furnishes legal advice on and reviews reports on other legislative proposals; participates in the development of agency policy and assists in the accomplishment and coordination of program objectives consistent with established policy.

Mr. General Counsel, do you have any legal problems bothering the GSA?

Mr. VAN CLEVE. I have legal problems all the time.

Mr. EVINS. Are you going into court?

Mr. VAN CLEVE. We do not go into court. The Department of Justice goes into court when we have cases that go there.

Mr. EVINS. Do you have 130 lawyers over there?

Mr. VAN CLEVE. No; we have 130 people.

Mr. MOODY. Break that down between lawyers and clerical.

Mr. VAN CLEVE. That breaks down to 87 lawyers. This is on an authorization of 137 employees, Mr. Chairman; 87 lawyers and 50 clerical.

Mr. EVINS. Do you look over the proposed contracts with the automobile companies when they want to make sales to you?

Mr. VAN CLEVE. Yes; we review all of the invitations that go out, we review the proposed contract award, and we provide legal help, if there is any legal help required in the administration of the contract.

Mr. EVINS. Do you adopt what the corporation lawyers propose, or do you add some stipulations and amendments?

Mr. VAN CLEVE. We have a fair burden of effort to convince some of the bidders and those wishing to do business with us that they ought to do business on our terms, rather than the way they are sometimes used to doing business.

STAFFING

Mr. TALCOTT. Some of the OEO attorneys have four staff people for each attorney; secretaries, receptionists, researchers, and investigators. By comparison with OEO, it looks to me as though you are not adequately staffed here.

Mr. MOODY. We are proud of our ratio of legal talent to nonlegal in this field. We think it is a tight shop and a good shop.

Mr. VAN CLEVE. We have made a considerable effort to keep the ratio of the legal staff higher than the clerical people. That is why the shop has been able to keep these same personnel levels in light of expanding workloads.

Mr. MOODY. This was worse some years ago, and we have been able to increase our legal staff.

Mr. EVINS. Do you have a lot of claims to look over?

Mr. VAN CLEVE. We have a fair amount of contract claims, and I have in the central office a total of eight or nine lawyers who devote their time entirely to the defense of the Government's position in disputes that arise out of contracts.

Mr. MOODY. That is before the Board of Contract Appeals.

Mr. JONAS. That is a board within GSA?

Mr. MOODY. Yes.

SETTLEMENT OF CLAIMS

Mr. EVINS. Do you settle small claims; under $3,000?

Mr. VAN CLEVE. We can settle Government claims of $20,000 or less under the Federal Claims Collection Act of 1966, and make settlement up to $25,000 for claims against the Government under the Federal Tort Claims Act.

Mr. EVINS. It was listed, then?

Mr. VAN CLEVE. Yes, sir; about 2 years ago.

Mr. EVINS. Is this settled within GSA or does it go for all civilian agencies of government?

Mr. VAN CLEVE. Those are claims involving GSA.

Mr. EVINS. Just GSA; and military claims would go to the Judge Advocate General's Office.

Mr. VAN CLEVE. The law provides any department may settle claims up to those amounts.

Mr. JONAS. Off the record.

(Discussion off the record.)

Working Capital Fund

PROGRAM AND FINANCING [IN THOUSANDS OF DOLLARS]

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	Operating costs, funded	6,329	6,850	7,535
	Capital outlay: Purchase of equipment	176	176	365
	Total program costs, funded	6,505	7,026	7,900
	Change in selected resources [1]	27		
10	Total obligations	6,532	7,026	7,900
	Financing:			
11	Receipts and reimbursements from:			
	Federal funds: Revenue	−6,584	−7,000	−7,700
	Proceeds from sale of equipment	−1		
	Change in unfilled customer orders	11	−20	−20
	Supplies, adjustments, and transfers	3		
21	Unobligated balance available, start of year: Obligation in excess of availability	142	80	193
24	Unobligated balance available, end of year: Obligation in excess of availability	−80	−193	−173
27	Capital transfer to general fund	77	107	
40	New obligational authority (appropriation)	100		200
	Relation of obligations to expenditures:			
10	Total obligations	6,532	7,026	7,900
70	Receipts and other offsets (items 11–17)	−6,571	−7,020	−7,720
71	Obligations affecting expenditures	−39	6	180
72	Obligated balance, start of year	481	578	642
74	Obligated balance, end of year	−578	−642	−622
90	Expenditures	−137	−58	200
	Expenditures are distributed as follows:			
01	Out of current authorizations	100		200
02	Out of prior authorizations	−237	−58	

[1] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Commodities for sale	+ 200	250	250	250
Unpaid undelivered orders	98	75	75	75
Total selected resources	298	325	325	325

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	2,878	3,167	3,457
11.3	Positions other than permanent	125	135	135
11.5	Other personnel compensation	133	152	152
11.8	Special personal services payment	104		
	Total personnel compensation	3,240	3,454	3,744
12.0	Personnel benefits	231	265	309
21.0	Travel and transportation of persons	17	20	22
	Payment to interagency motor pools	5	5	5
22.0	Transportation of things	13	15	15
23.0	Rent, communications, and utilities	434	469	529
24.0	Printing and reproduction	2	2	2
25.1	Other services	868	850	914
25.2	Services of other agencies	20	20	20
26.0	Supplies and materials	1,500	1,750	1,975
31.0	Equipment	176	176	365
	Total costs, funded	6,505	7,026	7,900
94.0	Change in selected resources	27		
99.0	Total obligations	6,532	7,026	7,900

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	470	530	570
Full-time equivalent of other positions	19	20	20
Average number of all employees	455	498	536
Average GS grade	5.7	5.8	5.8
Average GS salary	$6,923	$7,200	$7,338
Average salary of ungraded positions	$6,406	$6,382	$6,412

Mr. JOHNSON. Our Working Capital Fund, we are asking for $200,000.

Mr. EVINS. But looking at your chart on page 91, you had $350,000 and you added $100,000, which made it $450,000; and in 1968 you did not ask for anything. In 1969 you are asking for $200,000, which will make your working capital $650,000.

Mr. JOHNSON. Our problem in this activity is to keep our unit costs from going up. To do this we must replace some of our equipment, which is now 16 and 17 years old.

Mr. EVINS. You want to do away with this equipment and put in some new?

Mr. JOHNSON. Yes, sir; in the case of collators and presses, for instance.

Mr. EVINS. Mr. Administrator, you talked about that last year.

You know, some of these small printing firms want to get some of this GSA printing business.

Mr. JOHNSON. Yes, sir; and we have been working with the Joint Committee on Printing on the matter.

Mr. EVINS. This is not modern enough equipment for you?

Mr. JOHNSON. It will not enable us to hold down our cost.

Mr. EVINS. How many print shops do you have?

Mr. JOHNSON. A sum total of 27.

Mr. EVINS. You do not need any more; do you? Isn't 27 enough, all over the Nation?

EQUIPMENT MODERNIZATION

Mr. JOHNSON. We need to modernize this equipment in existing plants to hold unit cost down. (Displaying pictures.)

Mr. EVINS. What is this?

Mr. JOHNSON. That is an arc lamp used in platemaking.

Mr. EVINS. This is an old-fashioned hand-cutting machine.

Mr. JOHNSON. That is right. This is the type of equipment we need to replace and in connection with our replacement plans we work pretty close with the Joint Committee on Printing who have provided us this letter with respect to this request.

Mr. EVINS. You did not show us any of your new, modern machinery. You just show us your old stuff.

Mr. JOHNSON. We have very little of new modern equipment. We obtain equipment mainly when we establish a centralized plant by transfer from other Government agencies.

LETTER FROM SENATOR HAYDEN

Mr. EVINS. Put that letter in the record, Mr. Reporter, from Chairman Carl Hayden.

(The letter follows:)

CONGRESS OF THE UNITED STATES,
JOINT COMMITTEE ON PRINTING,
Washington, D.C., February 26, 1968.

The ADMINISTRATOR,
General Services Administration,
Washington, D.C.

MY DEAR SIR: The Joint Committee on Printing has completed a review of your proposed plan which is designed to update the printing and centralized duplicating program of the General Services Administration. The Joint Committee has endorsed this program since its inception and states now, as it did 7 years ago, that it presents a sound and proven approach.

It has been the consistent position of the Joint Committee for many years that departments and agencies generally, within the limits of such work which justifiably may be produced on their own facilities, should attempt to avoid using equipment which is inefficient because of age and/or worn condition.

It is the Joint Committee's conclusion that many departments and agencies which are taking reductions in their 1969 printing budget should stand ready to prove what is "true economy" of their demands. If the full program of printing service is expected, the fact of higher costs in personnel and new equipment must be recognized, so that no reduction in 1969 budgeting should be accepted without fullest ventilation.

Furthermore, with a reasonable allowance for appropriate amortization, it is the Joint Committee's view that serious consideration should be given to technological advances, including improved reproduction materials and evolutionary production techniques, which result in machinery capable of achieving significant gains in production, efficiency, and economy.

We are gratified to note that your approach favorably reflects those concepts to a significant degree.

Yours very sincerely,

CARL HAYDEN, *Chairman.*

OPERATING COST

Mr. EVINS. You have $450,000 in your Working Capital Fund.

Can you operate another year on the $450,000, as you have in the last year?

Mr. JOHNSON. No, sir; up to now you have provided $450,000 in this fund, and GSA returned $520,000 to the Treasury Department.

Mr. EVINS. How did you do that?

Mr. JOHNSON. The law requires that any profit GSA makes on these transactions go back to the Treasury at the end of the year, and here is the amount we have returned from 1948 through 1968.

Mr. EVINS. Well, you have a print shop, let us say, in Rochester, N.Y., just as an example, and they print material for GSA in that area and they distribute it.

Mr. JOHNSON. The agency pays for it. It is on a straight reimbursable basis.

Mr. EVINS. When the other agencies pay for it, that is where your profits come in?

Mr. JOHNSON. We try to set a rate that will allow us to break even; if we end the year in a loss position we would have to make it up the following year by increasing production or prices to the agencies we serve.

Mr. EVINS. Do you not have a big enough printing plant here, in the Government Printing Office?

Mr. JOHNSON. That would run our unit cost up because GPO is not interested in our many small jobs that range from $1 to $25.

Mr. EVINS. We have the biggest printing plant in the world.

Mr. JOHNSON. But they do not do the kind of work that we do. You see, 80 percent of our business are job orders under $25 on which the agency wants overnight service.

Mr. EVINS. The small businessman wants that little job order.

I have had small printing plants say the Government is going into the printing business.

Mr. JOHNSON. That is correct. However, we have gone out on a seven-city survey and taken our small duplicating jobs, and priced them in the commercial printing plants, and they cost 40 percent more than we can do them for in-house.

MODERNIZATION AND EQUIPPING PLANTS

Mr. EVINS. Well, you have 27 printing offices, and you want money to modernize your existing plants, without expanding into more printing offices.

This is for modernizing your facilities.

Mr. JOHNSON. For modernizing our facilities and equipping five new plants.

Mr. EVINS. It will be 32, then?

Mr. JOHNSON. Yes.

When we move to Foley Square in New York, we have two choices. We can either put one centralized plant in the basement and let people utilize it for their need, or we can put five plants in the building.

We have refused to let five plants come in. We establish one centralized facility in the basement so that we may provide more efficient and economical services. We get a lower unit cost by consolidating printing and duplicating equipment.

Mr. EVINS. Your plant in the basement is GSA's own operating plant?

Mr. JOHNSON. That is right.

Mr. EVINS. The five would be several agencies in the building that want to have their own?

Mr. JOHNSON. That is correct.

Our objective is to lower Government printing costs. Our profit simply comes when we cannot estimate our cost close enough to break exactly even.

The figure I gave you was roughly, over the last 20 years; but during that period we have returned to the Treasury from this fund everything that has been appropriated to date.

GOVERNMENT VERSUS PRIVATE INDUSTRY COST

Mr. JONAS. There are a lot of us that take a dim view of expanding Government competition with private taxpaying enterprises.

Mr. JOHNSON. Mr. Jonas, I agree with you, and in our cost-benefit analysis we do now take into account that the commercial man is paying taxes. That is taken into consideration when we make cost comparisons which are the basis of our decision to establish these plants.

At the same time we add into the Government's cost all costs that are equal to that which a private company would pay.

The printing business generally does not want small printing jobs of less than $25. This is especially true where it is delivered at 6 o'clock at night and needed the following morning at 8 o'clock.

Mr. JONAS. I can cite you some that would be glad to have your business.

Mr. JOHNSON. In this operation, we consistently, whenever we get more than we can handle, try to contract out with commercial plants, and we often find that they will not take the work without charging us up to 200 percent of the normal rate.

Mr. JONAS. In these analyses you have made, did you base it on competitive bidding, or did you just go out and take comparative prices?

Mr. JOHNSON. Both ways.

Mr. JONAS. Which was cheaper?

Mr. JOHNSON. The competitive bidding is usually cheaper if the job is large; but on a $25 job it would cost us more than the price of the job to get competitive bids.

Mr. JONAS. 80 percent of these are under $25.

I do not see why a Government agency would want to have printed less than $25 worth of forms.

PRINTING AND DUPLICATING

Mr. JOHNSON. Much of this is duplicating or reproduction. It is not printing, in the sense of the Government Printing Office. In Foley Square again, rather than having duplicating equipment dispersed over the entire building, we provide a hot copy center that will provide over-the-counter service.

Mr. JONAS. But, you do not call that a printing plant.

Mr. JOHNSON. It is, within the concept of this fund.

This is called the printing and reproduction fund.

GOVERNMENT COMPETITION

Mr. JONAS. I do not know what the experience of my colleague here is, but I get more complaints from the printers about Government competition than any other Government activity.

Mr. BOLAND. I do not think you get it so much from this type of operation as the Government Printing Office itself. That is where the general complaint lies, rather than with these 27 reproduction plants around the country.

Mr. TALCOTT. This booklet here is not a $25 job, is it?

Mr. JOHNSON. No, sir. I stated 80 percent of our volume is in the $25-and-under class. We have discussed this, and the commercial printers want the kind of business that the GPO is doing, a long run; that is where they make their money.

TYPE OF EQUIPMENT NEEDED

Mr. EVINS. You list here what you want; $290,000 for 10 offset presses, $80,000 for collators, etc.

What are platemakers?

Mr. JOHNSON. They make the masters or mats that are used on printing or duplicating presses.

Mr. EVINS. You state in your justification that the Joint Committee on Printing has reviewed this. They do not say to do this, they say in conclusion that consideration should be given to technological advances and the evolution of products and techniques, which result in machinery capable of doing this. They say, consideration should be given to——

Mr. JOHNSON. Compared to the old machines we have today, the new collators requested will produce 150 percent more with the same people. The presses will produce 50 percent faster than the ones we now have.

FINANCING

Mr. EVINS. Mr. Johnson, would you have enough money in the working capital fund to buy the equipment to modernize your 27 printing plants without expanding into five more new ones?

Mr. JOHNSON. No, sir.

Mr. EVINS. You have $450,000 in your working capital fund.

If you need a facility here and there, you can buy it, can you not?

Mr. JOHNSON. We cannot do that, Mr. Chairman, because we must have some of that cash on hand to pay bills, to take the discounts, to keep unit costs down.

Mr. EVINS. You are making a profit.

Mr. JOHNSON. If you let GSA keep the profit by insertion of a piece of language, we can use this to modernize our equipment.

Mr. EVINS. Off the record.

(Discussion off the record.)

GSA SUMMARY

Mr. EVINS. Gentlemen, in summary, you are asking for some $510,292,510.

UNOBLIGATED BALANCE

You have an unobligated balance of $274.5 million, and an obligated balance of $128.9 million.

You have a large carryover.

Mr. JOHNSON. Yes, Mr. Chairman, the unobligated balance carryover is $274 million, the biggest single part of that is for those unawarded construction projects for which you have provided funds.

Mr. EVINS. $235 million of the $274 million is frozen.

Mr. JOHNSON. Yes, sir.

OBLIGATED BALANCES

Mr. EVINS. You cannot use it.

What about the obligated balances?

Mr. JOHNSON. The obligated amount of $128 million is simply for payment of bills for the things that GSA bought last year. It is already obligated. We are awaiting the bills.

EXPENDITURES

Mr. EVINS. You are going to spend, from prior appropriations, $142 million?

Mr. JOHNSON. That is right.

Mr. EVINS. You are going to spend from current appropriations $465 million?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. For a total expenditure of $607 million?

Mr. JOHNSON. Yes, sir.

Mr. EVINS. What about this 1969, $64,945,000?

Mr. JOHNSON. That is the result of our revolving fund transactions.

In a revolving fund, the budget expenditure impact is the difference, Mr. Chairman, between what you take in and what you pay out.

This is simply an estimate.

Mr. EVINS. What effect would it have on your budget if this freeze were lifted?

Mr. JOHNSON. Since this is primarily construction funds, the bulk of the expenditure would occur the following year.

If for instance $100 million were released we might spend $20 million the first year, depending on when you lifted the freeze, because, you see, on construction projects, that generally covers a 3-year timespan and you obligate, your money in the first year but it is only spent as the contractor does the work, and usually his work is smaller in the first year.

EFFECT OF PUBLIC LAW 90–218

Mr. EVINS. What is the effect of Public Law 90–218?

Mr. JOHNSON. As I testified yesterday, the effect it had on GSA was a reduction of 18.1 percent in total obligations for 1968, and a 3.1 percent in the personal services obligations portion of our budget, excluding pay increases which, of course, were not in last year's budget.

So, as against the 10, GSA's pro rata share was 18 percent, and against the two, 3.1 percent.

In both cases we have overachieved the 2 percent–10 percent.

SUMMARY OF NOA, CARRYOVERS, AND EXPENDITURES

Mr. EVINS. Place this summary in the record, Mr. Reporter.

(The document follows:)

ESTIMATES OF APPROPRIATIONS, 1969, REQUESTS FOR NEW OBLIGATIONAL AUTHORITY, CARRYOVER BALANCES AND EXPENDITURES

Appropriation items	1969 NOA request	Carryover into 1969		Expenditures from—		Expenditures
		Unobligated	Obligated	Prior appropriation	Current appropriation	
Operating expenses, PBS	$278,763,000		$2,351,000	$2,061,000	$277,187,000	$279,248,000
Repair and improvement	80,000,000	$3,419,000	34,173,000	33,000,000	54,000,000	87,000,000
Constr., pub. bldgs. proj		235,598,931	69,506,000	82,000,000		82,000,000
Sites and exp., pub. bldgs. proj	10,995,000	35,507,396	12,953,000	18,000,000	3,000,000	21,000,000
Payments, pub. bldgs. purch. contracts	2,400,000				2,400,000	2,400,000
Expenses, U.S. court facilities	1,200,000		739,000	520,000	780,000	1,300,000
Operating expenses, FSS	76,534,000		4,564,000	3,390,000	71,940,000	75,330,000
Operating expenses, NARS	18,728,300		521,000	521,000	18,391,000	18,912,000
Natl. hist. publica. grants	350,000		21,000	21,000	350,000	371,000
Operating expenses, TCS	6,510,000		47,000	47,000	6,469,000	6,516,000
Operating expenses, PMDS	30,500,000		3,800,000	2,580,000	26,900,000	29,480,000
Expenses, disposal surp. prop	1,000,000		159,000	100,000	900,000	1,000,000
Sal. and expenses Office of Admin	1,944,000		82,000	82,000	1,864,000	1,946,000
Allowances etc., former Presidents	267,000		43,000	43,000	267,000	310,000
Expenses presidential transition	900,000				900,000	900,000
Working capital fund	200,000				200,000	200,000
Total, appropriation items	510,291,300	274,525,327	128,959,000	142,365,000	465,548,000	607,913,000
Other accounts						64,945,000
Total						672,858,000

Mr. EVINS. We think GSA is really one of the great service agencies of the Government.

You have an important mission, and we commend you and your fine staff.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. EVINS. Gentlemen, the committee will recess now.

TUESDAY, MARCH 5, 1968.

SECURITIES AND EXCHANGE COMMISSION

WITNESSES

MANUEL F. COHEN, CHAIRMAN
HUGH F. OWENS, COMMISSIONER
HAMER H. BUDGE, COMMISSIONER
RICHARD B. SMITH, COMMISSIONER
PHILIP A. LOOMIS, JR., GENERAL COUNSEL
ANDREW BARR, CHIEF ACCOUNTANT
EDMUND H. WORTHY, DIRECTOR, DIVISION OF CORPORATION FINANCE
IRVING M. POLLACK, DIRECTOR, DIVISION OF TRADING AND MARKETS
SOLOMON FREEDMAN, DIRECTOR, DIVISION OF CORPORATE REGULATION
DAVID L. RATNER, EXECUTIVE ASSISTANT TO THE CHAIRMAN
MAHLON M. FRANKHAUSER, REGIONAL ADMINISTRATOR, NEW YORK OFFICE
GERALD E. BOLTZ, REGIONAL ADMINISTRATOR, FORT WORTH OFFICE
LOUGHLIN F. McHUGH, CHIEF ECONOMIST
FRANK J. DONATY, COMPTROLLER

SALARIES AND EXPENSES

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Program by activities:			
	1. Full disclosure provisions	3,698	3,898	3,957
	2. Prevention and suppression of fraud	6,938	7,092	7,308
	3. Supervision and regulation of securities markets	614	645	655
	4. Regulation of investment and public utility holding companies	1,564	1,724	1,750
	5. Corporate reorganizations	429	446	453
	6. Operational and business statistics	319	333	443
	7. Executive and staff functions	1,688	1,783	1,809
	8. Administrative services	1,422	1,505	1,528
	9. Purchase of computer		425	
	Total program costs, funded [1]	16,672	17,851	17,903
	Change in selected resources [2]	−67	−121	
10	Total obligations	16,605	17,730	17,903
	Financing:			
25	Unobligated balance lapsing	116		
	New obligational authority	16,721	17,730	17,903
	New obligational authority:			
40	Appropriation	17,550	17,350	17,903
41	Transferred to other accounts	−829		
43	Appropriation (adjusted)	16,721	17,350	17,903
44	Proposed supplemental for civilian pay act increases		380	

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)—Continued

		1967 actual	1968 estimate	1969 estimate
	Relation of obligations to expenditures:			
71	Total obligations (affecting expenditures)	16,605	17,730	17,903
72	Obligated balance, start of year	1,139	1,024	984
74	Obligated balance, end of year	−1,024	−984	−1,058
77	Adjustments in expired accounts	−39		
90	Expenditures excluding pay increase supplemental	16,681	17,410	17,809
91	Expenditures from civilian pay act supplemental		360	20
	Expenditures are distributed as follows:			
01	Out of current authorizations	15,581	16,746	16,845
02	Out of prior authorizations	1,100	1,024	984

[1] Includes capital outlay as follows: 1967, $141,000; 1968, $439,000; 1969, $32,000.
[2] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Stores	36	40	40	40
Unpaid undelivered orders	227	156	35	35
Total selected resources	263	196	75	75

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Personnel compensation:			
11.1	Permanent positions	13,486	14,485	15,035
11.3	Positions other than permanent	156	84	84
11.5	Other personnel compensation	49	34	34
11.8	Special personal service payments	1	2	2
	Total personnel compensation	13,692	14,605	15,155
12.0	Personnel benefits	1,032	1,066	1,108
13.0	Benefits for former personnel	11	4	11
21.0	Travel and transportation of persons	474	492	507
22.0	Transportation of things	9	11	11
23.0	Rent, communications, and utilities	656	594	554
24.0	Printing and reproduction	85	66	66
25.1	Other services	328	314	320
25.2	Services of other agencies	5	5	5
26.0	Supplies and materials	172	134	134
31.0	Equipment	141	439	32
99.0	Total obligations	16,605	17,730	17,903

PERSONNEL SUMMARY

	1967 actual	1968 estimate	1969 estimate
Total number of permanent positions	1,405	1,403	1,428
Full-time equivalent of other positions	35	20	20
Average number of all employees	1,360	1,380	1,405
Average GS grade	9.3	9.5	9.5
Average GS salary	$10,063	$10,813	$11,048

Mr. EVINS. The committee will come to order. We have with us this afternoon our friends of the Securities and Exchange Commission headed by the Chairman, Manuel F. Cohen, along with Commissioner Hugh F. Owens, Commissioner Hamer Budge, well and favorably known around here in these sacred precincts, and Commissioner Smith. Are all of your commissioners here?

Mr. COHEN. Commissioner Wheat is not here. He expresses his apologies. He thought we would be here this morning, but he had a gentleman coming in from California.

Mr. EVINS. We understand; he has many commitments.

We also have Mr. Loomis, General Counsel, Mr. Barr, Chief Accountant, Mr. Worthy, the Director of Corporation Finance Division, Mr. Irving Pollack, who is the Director of the Division of Trading and Markets, Mr. Solomon Freedman, a wise man, Director of the Division of Corporate Regulation, Mr. David Ratner, Executive Assistant to the Chairman, and Mr. Mahlon M. Frankhauser, Regional Administrator of the New York office.

Is Mr. Frankhauser here from the New York office?

Mr. COHEN. Yes, sir.

Mr. EVINS. We want to hear from you a little later about the market in New York.

Mr. FRANKHAUSER. Fine, Mr. Chairman.

Mr. EVINS. Mr. Boltz is the administrator of the Forth Worth office.

Mr. COHEN. He is right back here.

Mr. EVINS. You are all nice to come.

Mr. McHugh is the chief economist, and Mr. Donaty is the comptroller.

This is a very distinguished group. Mr. Chairman, we always listen to you with profit. We are pleased to hear you in connection with your justification for your budget. By the way, your budget is well prepared. It is a very interesting budget.

Mr. COHEN. Thank you, sir. Does that mean we can leave now?

Mr. JONAS. Yes—if you would rather have compliments than money.

Mr. COHEN. I can always depend on Mr. Jonas.

Mr. EVINS. You always present your statements well.

GENERAL STATEMENT

Mr. COHEN. Mr. Chairman and members of the committee: It is equally a pleasure for my fellow Commissioners and for me to be here with our staff to discuss with you the programs, the activities, the financial arrangements of the Commission for the fiscal year beginning next July 1.

I have already sent you a rather long letter discussing our budget requirements for next year. I realize the letter was lengthy and for this I apologize. As Mr. Jonas knows, I am not necessarily known as a man of few words. The problems we do face are difficult, complex, and growing, and I did feel an obligation to explain them as clearly and as fully as I could. I will not repeat what is set forth in that material. I will simply highlight the situation in which we now find ourselves and describe briefly our request and then answer any questions you may have.

Mr. EVINS. Mr. Chairman, your full statement may be included in the record, if you will highlight your statement. Also, your supplemental letter will be included following your statement.

1969 REQUEST

Mr. COHEN. Fine. In brief, our request for next year is in the amount of $17,903,000. Our adjusted appropriation for this year, after excluding $496,000 for rental and purchase of our computer is $17,234,-

000. Consequently, the amount we are seeking represents an increase of $669,000 over this year's adjusted appropriation.

The principal portion of that additional amount is $344,000 for mandatory pay increases. The remainder of the requested increase consists of $206,000 for 25 additional positions, and $119,000 for other expenses.

FEES

In essence, that is what we are asking for, 25 additional positions. I think it is important to note that in response to the request of this committee we took certain steps a few years ago and they are now paying off very well. The Commission anticipates receiving fees of $11.8 million next year as compared with $11.7 million this year. The Commission is therefore recovering about 66 percent of its cost for this year as compared with 40 percent in fiscal 1966. Of course, all revenue collected by the Commission is deposited to the general fund of the Treasury.

ACTIVITY IN THE SECURITIES MARKETS TODAY

Before describing the 25 positions that we are seeking, the reasons for them, I would like to take this opportunity to describe the general climate and the accelerated activity in the securities industry today which compels the Commission to exercise greater vigilance and expend greater efforts in regulatory and enforcement matters.

I might also digress for a moment merely to refresh your recollection that in the last several years the Commission has in fact had a minus growth in its authorized staff. I think over the past 3 or 4 years we have lost in excess of 50 warm bodies despite the fact that during that period there has been a tremendous and dramatic growth in the securities markets.

Now, as I say, recent years have seen a startling growth in the number of investors, number of securities transactions, volume and value of securities traded on and off the stock exchanges, as well as a truly dramatic growth of institutional investors and changing trends in the form and manner of investment management.

This last point is of considerable concern to us, to other observers of the securities markets and to all right-thinking people who are concerned with the continued health of our economy.

There are now some 24-million investors compared with 17 million in calendar 1962.

Average daily volume on the New York Exchange has grown from 3-million shares in 1962 to over 10.1 million in 1967.

Since January 1, 1968, the volume has increased further and the exchanges, as you know, have found it necessary to shorten trading hours.

They have just resumed the regular sessions as of yesterday. But even during that period of shortened trading hours volume was tremendous.

The American Stock Exchange and regional exchanges have been exceptionally active. Indeed, in some respects their activity and rate of growth has exceeded that of the New York Stock Exchange. In gross, it is not quite as important, but in terms of the rate of growth

it has been tremendous. For example on one recent day, the American Stock Exchange volume exceeds 10 million as compared with a daily average of 2,800,000 shares in calendar 1966 and 2,200,000 in 1965. A new record monthly trading high was established in January despite 8 shortened trading days. This is so extraordinary, the volume went beyond the most psychedelic dreams of the officials of the exchange or anybody in the industry, and indeed even beyond any of the psychedelic dreams that we bureaucrats envisioned might occur.

This activity, coupled with generally rising stock prices, has resulted in a nearly 200-percent gain in the total market value of trading on all exchanges—from $57 billion in 1962 to $168 billion in 1967.

Mr. JONAS. Off the record.

(Discussion off the record.)

Mr. COHEN. We might expect during this entire year that there may be a few days when the volume will drop a little bit, Mr. Jonas. There is no indication that that is the trend, however. In fact, the indications are to the contrary. I do want to say one thing and I am glad you stopped me here. The numbers here are impressive. But, it is just one way of trying to convey some notion of the growth in the situation, but the numbers in themselves are not important. It is what accompanies the numbers, this great tendency toward more speculative trading, this greater tendency to draw to the securities markets people who have been engaged in other endeavors but, when they see all this money around it is like the honey pot to the bees. That is really at the core of the problem. This was the only way I could really describe the dimensions of the problem.

Mr. JONAS. I used to hear that when the man on the street, the bootblacks and various people were buying stocks, then was a good time to get out.

Mr. COHEN. You may be right, sir. In fact, there are a lot of bootblacks back in the market. This is one of the reasons we are concerned. We are concerned not because they are in the market. There is nothing wrong with somebody who has some excess savings allocating a portion to the securities market.

INVESTMENT COMPANIES

Mr. JONAS. Do you have figures to show whether the volume is attributable to institutional trading or more people in the market?

Mr. COHEN. It is both, sir. The institutional investors have grown tremendously, dramatically. Now, when I say institutional investors, I am talking about the pension funds—their rate of growth has been the greatest—and the mutual funds which have grown tremendously. We now have something less than 800 active investment companies. This is really phenomenal, 800 active ones. I think there were more than those registered recently and 783 approximately is the number of the active companies. I cannot remember the precise number.

I am told that it was 801 at the end of January. I underestimated again.

PUBLIC CONFIDENCE

But these include new vehicles which are being offered, as I will explain in a few minutes, new types of funds which are attracting the funds of investors. I can go back to the bootblack for a minute, the

Commission certainly feels that if a bootblack has some excess savings—and if you pay a quarter for a shine today maybe he does—if he feels he can allocate it to securities markets, that is a good idea, because he is helping the economy and, hopefully, himself. What we are concerned about, however, is that more and more unsophisticated individuals are being brought into the market with the result that the danger and the risk become greater and since the whole thing rests on public confidence, if that is destroyed the whole thing can topple.

That is what has happened before. This is our abiding and constant fear.

Mr. JONAS. Those are the people, the unsophisticated that are the first ones to start unloading, aren't they?

Mr. COHEN. This is true, because they are frightened and because they are at the narrow edge of their resources.

On the other hand, a great many of the unsophisticated investors have been drawn into institutional investors like the mutual funds because of the smaller amounts involved. Yet, the charges which they suffer in connection with the acquisition of the funds, the charges they suffer in connection with the maintenance of their interest in the funds is tremendously higher than it is in other areas. But you are quite right. In those areas there is a greater safety factor. It is the small unsophisticated investor who wants to go into the market directly and is playing the game—and I will use that word for want of another word—against the professionals, who risks being trampled. Our experience as recently as 1962 indicated a great many people were trampled. We are now in a similar area. This has been building up. I am not trying to make that kind of a pitch, but I must say it is during this period that our staff has been going down. That is why I am here today with this modest request.

Mr. TALCOTT. Isn't one of the problems today, at least I get letters from my constituents wanting me to complain to you, that individuals have invested in stocks and they have lost money and they don't think they are supposed to lose money, they think they ought to be guaranteed a profit on every investment.

Mr. COHEN. That is a danger. Unfortunately, there is no possible way, no matter how careful one can be, of persuading people that the Government isn't there to guarantee these securities.

Mr. TALCOTT. But this is the impression that, somehow or other, the Federal Government has created.

Mr. COHEN. Let me explain that. I think that impression has been created. Yet the opposite side of the coin is equally interesting and important. There are people coming to visit the United States from all over the world who are considering action to improve their capital markets. We have built a capital market in which there is wide popular public interest to a point where we are looked upon as having found the way of doing this the best of all possible ways. Canada has recently changed its laws and in many respects its new laws are more stringent than ours because of a shaking of the confidence in that country as a result of certain excesses which have not occurred here because we have had some good laws; of course we have had our excesses, too.

Great Britain is now going through a series of amendments of its company law. The Common Market people have issued a report recently and they have gone so far as to recommend an SEC for Western Europe. It is not likely that it will happen but it is an indication of attitude. These are actions by very sophisticated people who believe that the continued health of their economies depends on viable, healthy, and growing securities markets and that means that you have to persuade people to allocate a portion of their savings at least to equity securities. It does create the danger, if you have an SEC and other enforcement activities that are vigorous, that some people feel they are fully protected. I don't know how you deal with that except by education. We do our darnedest in this connection to make it clear.

The statute is perfectly clear. It is unlawful to represent that the Commission approves or passes upon the accuracy of documents or securities. In fact, it is a criminal offense to suggest it. We make this known wherever we can.

So there is a balancing required. As we see it, the balances comes out, I think, on the side of our system. Everybody else is trying to copy it.

Mr. EVINS. Mr. Chairman, we won't ask you about the devaluation of the pound and the outflow of gold.

Mr. COHEN. I am glad you are not, because I don't know the answers to any of those questions.

Mr. EVINS. We are all looking for the answers.

You may proceed with your statement.

Mr. COHEN. Thank you, sir. Now, this goes directly to Mr. Jonas question:

ACTIVITY OF FINANCIAL INSTITUTIONS

The increase in 1967 is partially due to the increased activity of financial institutions. They effected $12.3 billion of common stock purchases and sales in the third quarter of 1967, a new record. This compares with a quarterly rate of $8.1 billion in 1966 and $3.1 billion in 1962.

Mr. JONAS. That was $12 billion out of what figure, the $57 billion?

Mr. COHEN. That is right; for the entire year. No, it is $168 billion in 1967. The $12.3 billion is only for one quarter. If you annualize it it would be approximately $50 billion.

Mr. JONAS. Roughly a little less than a third?

Mr. COHEN. Exactly. It is growing each year. I want to make one point here that sometimes it lost sight of. People think of institutions as big investors as against the little fellow who is buying directly. This, of course, is true, but every institution is really nothing more than a collection of the smallest people, the people who cannot invest directly but must invest through a mutual fund or a pension fund, and whose livelihood and retirement depend upon the continued viability of those institutions.

Now, I would like to proceed, if I may, Mr. Chairman.

Mr. EVINS. Proceed.

ADDITIONAL POSITIONS—INVESTMENT COMPANY PROGRAM

Mr. COHEN. We are seeking funds for five additional positions in the Division of Corporate Regulation to meet the increased workload in the regulation of investment companies.

I should say, at the outset, that that Division has responsibilities for our activities with respect to reorganization under the National Bankruptcy Act of publicly held companies. Strangely enough, during this period of increasing affluence there has been an increase of activity in this area. That Division is also responsible for our continuing activity under the Public Utility Holding Company Act of 1935 which, as you know, relates to holding companies for public utility operating companies.

In this area we badly underestimated the situation and are faced with a tremendous upsurge of activity which has been increasing. We are not asking for any help in either of the two areas I have just mentioned. It is in the investment company area that we are now seeking some assistance.

Except for a few additional secretarial positions in the past 3 years, the number of personnel assigned to this task has not increased despite substantial increases in workload. Here again I go to your point. For example: registration statements and posteffective amendments for financing increased about 30 percent; and annual and periodic reports increased about 10 percent. A total of 108 new investment companies registered with the Commission in fiscal 1967 as compared with 50 new companies in fiscal 1965. We expect an additional 150 new companies to register with the Commission next year.

I will explain later why that is, because of the trends I mentioned earlier. For the 7 months ending January 31, 1968, 83 companies registered with us as compared with our estimate of 125 for the entire fiscal year. The trend toward the development of new types of investment companies suggests that our estimate may be understated.

Although our examination processes have been streamlined—and they really have been—we have reached a saturation point. The additional personnel are needed to meet not only the increase in the review of filings and reports but to respond as promptly as we can to the ever-increasing number of problems requiring the development of new policy positions and rules under the 1940 act. The additional personnel are required to expedite the conduct of necessary investigations. To illustrate the significance of this activity, I might point out that as an outgrowth of inspections of investment companies, about $3.9 million has been returned to investors either directly or indirectly during the last 4 years as compared with a cost of $1.9 million for conducting all inspections and investigations of investment companies during that period.

NEW TYPES OF INVESTMENT COMPANIES

In addition to the arithmetic increases, we are experiencing the advent of a number of new concepts within the investment company industry. This is where a number of new types of companies are being organized and are attracting money from people who perhaps are concerned about engaging in short-term trading and perhaps speculation on their own, and are now considering doing it through these institutions because the institutions provide a certain amount of diversification and professional management.

For example: in the past year, a number of capital leverage companies, a totally unique type of investment medium, were organized.

This type of investment company offers two separate securities, each with a distinct, different and, in many cases, contradictory investment objective in a common pool of securities. One for growth—that class of stock is designed not to produce dividends but to produce capital growth using the leverage that is available to it because the other class of securities is concerned with income. Each side in effect, or each group in effect, is using the leverage of the other to enhance its own objective. But the problems here for us as regulators and for the entrepreneurs and for the investors are immense.

Another relatively new type of investment company is the speculative or hedge fund to which I adverted in my letter at some length. This is deliberately designed to use puts, calls, straddles, and to engage in short term trading and similar techniques.

Another one I should refer to, perhaps the newest type, which I call the multiadviser fund. In this form, the fund manager allocates varying and changing portions of the portfolio for separate management by unaffiliated subinvestment advisers who compete with one another in terms of performance, objectives and other results.

The competition takes the form of "If you do better than the other fellow does, I will give you a bigger chunk of money to play with for the next quarter or the next 6 months."

These developments and the growing interest in mutual funds by other financial and nonfinancial institutions and business organizations have required and will continue to require ever larger portions of time and effort of our staff and of the Commission. I can illustrate such interest. We went to a meeting last week, a mutual funds conference, as it was called. I thought that I would be visiting with most of my friends in that industry—and there were a number of them there—but the larger number of the people present were people associated with insurance companies. They are very much interested in the funds. I think you all probably know that they have moved into this field very rapidly and are continuing to do so. In this connection, I should say it includes the very largest insurance companies, beginning with Prudential, which is No. 1 now, I understand, to the smallest. So much for the investment company situation.

ADDITIONAL POSITIONS—ECONOMIC AND STATISTICAL RESEARCH

In the area of economic and statistical research we are asking for nine additional positions for our Office of Policy Research for the purpose of extending, in a modest way, in scope and detail economic and statistical data pertaining to the capital markets which we need in connection with our every day duties.

The Commission conducts some economic research to assist it in the fulfillment of its responsibilities, but the larger part of our work is really done at the request of the Bureau of the Budget. The Commission conducts and publishes regular studies alone or in conjunction with other agencies. This information is useful to and is needed by various agencies of the Government and by industry. The projects for which the additional personnel are requested for 1969 include the following, and I will try to summarize them:

We would like greater information with respect to private placements and retirements of securities and to obtain that information in

a more timely manner. We are seeking more detailed and prompt information concerning liquid assets of corporations. This information is necessary to improve calculations and estimates of liquidity ratios and is useful primarily to industry and to other departments of the Government. It is, of course, an essential element in analyzing and projecting credit requirements and the ability of the capital markets and the money markets to meet them.

We are also trying to improve, in a very modest way, our present program with respect to gathering information concerning instiutional participation in the securities markets. At the present time our coverage is somewhat limited. We believe it important to extend these efforts to obtain information from additional groups. But, I do want to emphasize that our request does not contemplate a comprehensive study of all institutional groups and of the growing institutionalization of the securities markets generally.

What we contemplate, as I said before, is merely a modest improvement in our existing limited statistical program.

PENDING HOUSE JOINT RESOLUTION PERTAINING TO A STUDY OF INSTITUTIONAL INVESTORS

There is pending in the Interstate and Foreign Commerce Committee a joint resolution introduced by Mr. Moss and Mr. Keith which would authorize a comprehensive study of the growth and activities of all types of institutional investors and the effects of this growth on the securities market and on the economy, a subject which I will cover later in my statement. But I might say now, I am free to say that nearly all elements concerned or affected have now been in touch with me and indicate their aproval and backing of such a study. I include the banks, the insurance companies, the investment companies, and various elements in the securities markets generally.

Mr. EVINS. This would be supplementary to your present authority and jurisdiction?

Mr. COHEN. Yes.

Mr. EVINS. You have the authority to make such a study now, but it would reemphasize the importance of it?

Mr. COHEN. It would emphasize it, but we do need a few more dollars to provide the people who are required to conduct the study.

ADDITIONAL POSITIONS—COMPLAINTS AND INQUIRIES

We are asking for four clerical positions in 1969 for our Division of Trading and Markets to meet the continuing upsurge in complaints and inquiries, as well as to provide prompt and responsive replies to the public.

The Division responds to inquiries and complaints by mail, using form letters where appropriate, by telephone, personal interview, and otherwise. In the performance of this function, the Division frequently uncovers leads to securities violations, particularly when aggrieved investors come to complain. They may not understand that there is a violation of law involved, but that does provide us with a lead, or very often does. In addition, the Division provides the public with information and advice consistent with our statutory authority.

The public's need for prompt responsive replies, the assistance provided to our offices and divisions by this section, the complexity of the complaints and inquiries, I should say the growing complexity of those complaints and inquiries and the analyses required to respond, have increased materially.

The function, I should say in all candor, is also performed partly by other divisions of the Commission's staff. We are not asking for any additional people in those areas; we are making adjustments there. But, insofar as this Division, which is concerned with the operations of the markets and those who act for people in the markets is concerned, the growth has been such that we just feel we cannot absorb it within existing staff limitation. We are, therefore, limiting our request to this Division.

ADDITIONAL POSITIONS—REGULATION OF EXCHANGES AND OVER-THE-COUNTER MARKET

Continuing with the exchanges and securities markets generally, our Office of Regulation in the Division of Trading and Markets carries out the Commission's continuing responsibilities for regulation and for oversight of the exchange and over-the-counter markets. I have mentioned earlier, the securities markets have been subjected to and are continuing to experience an unprecedented degree of growth as well as change. I do want to emphasize the word "change." This is creating new problems. These factors require the Division to devote time and effort to basic studies of the mechanisms and procedures of the markets and of those who operate within them, to enable it to work with the exchanges, the NASD, and other interested groups in modifying or improving their rules and our own which govern securities trading.

Because of staff limitation, the Commission has not been, and is not now able, to keep fully abreast of many significant changes which are occurring in the securities markets. We are limiting our request to two additional positions in this area so that the Commission may improve somewhat its ability to perform some the regulatory tasks in a more timely and in a more effective fashion. In the long run, we believe this will mean less expense to the taxpayers and the regulated industry.

COORDINATION WITH STATES, SELF-REGULATORY BODIES, AND OTHER ENFORCEMENT AGENCIES

I may cover this later, but perhaps this is a good point for me to mention something that, frankly, when I started it a few years ago, I wasn't altogether sure how well it would work out. It is working out beautifully. I think it has enabled us to keep our requests somewhat more modest than they might otherwise have been. It has enabled the States and other enforcement organizations to do a more effective job and also, for them, perhaps at less cost. We call it coordination. A few years ago we announced that the securities industry was probably one of the most regulated industries in the country—and this goes to the point you made.

Mr. TALCOTT. Next to banking, maybe.

Mr. COHEN. Perhaps so. We noted that there was a certain amount of overlap, that we were receiving, generally speaking, good coopera-

tion from the industry, that we owed the industry something in return, and that we could perhaps improve our own efforts if we coordinated the activities of the States, the Federal Government, the self-regulatory organizations, the Post Office Department, the Department of Justice, and others.

We started that slowly a few years back. I asked Commissioner Owens, who, as you know, is a former administrator of the securities law in the State of Oklahoma, to undertake the responsibility to carry it on. He and the staff have really expanded this to the point where the job is being done well, and it is absolutely terrific. We have been able to give up some of the efforts that we were engaged in, to the States, where they could handle it. We can and do avoid unnecessary duplicate inspections. We are working toward simplified and unified forms of registration and reporting. All I can say is that it is working out very, very well.

I think I have covered 20 jobs thus far of the 25 that I mentioned we are asking for.

OTHER ADDITIONAL POSITIONS REQUESTED

The remaining five are allocated as follows: One investigator position in the Division of Trading and Markets to relieve senior attorneys from the more routine, time-consuming but necessary chores involved in investigations; two positions in the same division to carry out more effectively the regulation of broker-dealers who are not members of the NASD. I am sure all of you know that in 1964, when the statutes were amended, the Congress assigned to the Commission the role of providing for broker-dealers who were not members of the NASD—that is, the National Association of Securities Dealers—the responsibility to deal with them in a somewhat comparable manner. This meant the development of additional rules in the area of activity that the NASD has traditionally carried on, the development of testing standards, the conduct of examinations, and a number of related activities.

We are also asking, finally, for two positions in our Office of Data Processing to meet additional regulatory and enforcement computer applications.

COMPUTER APPLICATIONS

Mr. Chairman, I just want to mention that when we were talking about the computer, we made certain commitments about reducing the number of employees and reassigning other personnel. We fulfilled those commitments I think almost to the letter. We are asking for two more people, and I want to explain that. It is not because our calculations were wrong; but we are finding increasing uses for our computer. It is relieving professional people and others from time-consuming manual operations. We are dong a great deal more than we could ever do before and this request for two positions is really a modest one in terms of what we have been able to accomplish with this computer.

We have not, quite honestly, really gotten the most out of it yet. In this connection, however, I should say there is additional savings

to the Government because we do allow another Government agency to use it. I do not remember the figures.

Mr. DONATY. One shift representing 2,000 hours per year. A savings to the Government of about $110,000.

Mr. COHEN. That is a substantial sum.

INCREASED NUMBER OF REGISTRATION STATEMENTS FOR FINANCING

Now, if I may, I would like to highlight certain activities and explain briefly a few programs we have or will be initiating shortly. We have estimated that 2,000 registration statements for financing from issues other than investment companies will be filed with us this year as compared with 1,534 filed in the last fiscal year. There has been an increase in the investment company area but I thought it would be better to break those out and to deal with the industrial area at this point. For the 6 months ending December 31, 1967, 1,050 statements were filed as compared with 571 for the same period last year—an increase of 84 percent.

There has also been a sharp increase in resort to the securities markets—and this is more significant perhaps than the other increase, although they are both of great importance—by smaller and unseasoned companies.

REGULATION A FILINGS

Mr. EVINS. These companies making public offerings of $300,000 or less are not regulated. This is the area where there probably could be a lot of swindles.

Mr. COHEN. That is right.

Mr. EVINS. Why do you permit them to escape regulation or supervision?

Mr. COHEN. There ar two answers I might give to that.

First, for offerings by companies, whether small or medium size, of less than $300,000 in 1 year, pursuant to provision of statute, we have what is called regulation A.

Mr. EVINS. Is this exemption by statute or by administrative regulation?

Mr. COHEN. It is by administrative regulation which implements the statute.

The statute provides in section 3(b) that any offering up to $300,000, may be exempted from registration by the Commission in whole or in part. For a long period of time the Commission provided a complete exemption, merely required the filing of a notification. But most of the legitimate people in the business came to the Commission after a while and complained about this because of the problems that you have mentioned, that these offerings frequently presented unfair competition—unfair in the sense that those whose standards were high had to compete with people whose disclosures and whose integrity did not match those that were required to comply with the rules.

In consequence of that fact, the Commission adopted regulation A, which has been in effect essentially in its present form, although it has been modified somewhat, since approximately 1921.

The other area of difficulty is the so-called intrastate offering, which is an offering by a company organized and doing business within a

particular State and in which the offering is limited to residents of that State. There is no dollar limitation there and the offering may go up into the millions.

Our jurisdiction to require registration does not exist here. These offerings are exempt from registration. But in both areas—regulation A and intrastate—the Commission has jurisdiction with respect to violations of the fraud provisions, and a great many of our cases have arisen from both of these areas—in fact, in one of the mid-Western States we had to send practically half the personnel of our regional office to spend almost 2 years to clean up a situation there that was pretty terrible, and finally resulted in indictment of a dozen or two people.

Also in the area of regulation A, the Commission has this responsibility and we have exercised it. But where regulation A is available, the Commission has a swifter remedy, it can suspend the use of the offering circular if facts warrant it. This effectively stops the offering.

In the case of the intrastate offering, sometimes we do not know about it and sometimes we learn about it too late. We therefore have to resort to the injunctive process frequently after the horse has gotten out of the barn, or to the criminal courts.

FRAUDS

Mr. EVINS. With the growth of the market and your vast experience over the years, have you confirmed your original judgment that you should continue this exemption, or should it be changed somewhat?

Mr. COHEN. Mr. Evins, I think I would answer shortly first and try to elaborate.

I think I would retain the exemption. I recognize the difficulties this makes for the Commission and for other enforcement agencies and the problems.

Mr. EVINS. It makes more work for the Commission, but what percentage of frauds are occurring in the small issues?

Mr. COHEN. I think percentagewise the greater number of frauds occur in the smaller issues, but not all of those are subject to regulation A.

On the other hand, we have had some experience with improper activity in respect to larger issues, and if you add it up in dollars, I do not know how we would come out. I do not think we have ever made the classification.

I think it is fair to say that most of the trouble is in the unseasoned company, in the smaller company, the promotional company and companies of that sort.

Now, my chief policeman and regulator in that area is here today, Mr. Pollack.

Mr. EVINS. Most of your frauds are in the small issues.

Mr. POLLACK. I think numberwise it will be in the small issues; dollarwise it will probably balance out.

Mr. EVINS. Numberwise there are increases, but you do not amend your regulations to make them subject to supervision in the light of this experience.

Mr. POLLACK. I think it is a balancing question, Mr. Chairman, as to whether you can require the smaller outfits to go through the processes

of a full registration, for example, in making an offering. And so I think Congress balanced out those two things and decided maybe when the offering was $300,000 or less you would have an exemptive regulation under which the Commission could set more limited conditions for the offering. I think in terms of dollars you would probably find that the loss that is suffered by investors is much greater in the larger schemes than it is in the smaller ones, although, numerically, there is no question you have more.

Mr. COHEN. I think, to supplement the answer, Mr. Chairman, I would have to say we do have the authority to strengthen the existing regulation. We have considered and reconsidered that regulation, and have amended it from time to time. I think we received as many complaints that the regulations are too tough as we have that that the regulations are too easy, which somehow gives me the feeling that maybe we are in the right spot.

Mr. EVINS. Those complaining about the toughness are the people that want to issue stock in the securities market; those complaining about the fraud are the purchasing public that you are intended to protect.

Mr. COHEN. I could not put it better.

JURISDICTION OVER INSURANCE COMPANIES

Mr. EVINS. Do you have any jurisdiction over insurance companies that are constantly cropping up all over. They sell a small issue which drops down to nothing and they go bankrupt. Then, they leave that State and go to another State which has a weak State law and start there.

Mr. COHEN. Yes, sir; we have the fraud jurisdiction if in fact this is a true intrastate exemption.

Mr. EVINS. They are intrastate operators that operate only for a short time in one State.

Mr. COHEN. We have had that situation. In fact we put a few gentlemen in jail a few years ago. I think all of the appeals have now expired. They were operating precisely in this fashion. They would organize a company in one State and either would fold it or continue, but not in a healthy way.

Mr. EVINS. I think we are on the same wavelength. Go ahead with your statement.

EXAMINATION OF FILINGS AND REPORTS

Mr. COHEN. Thank you.

I was talking about the vast increase in the number of filings, and particularly the number of unseasoned companies which have been filing with us and have never filed before and therefore have not had, if I may use that expression, the benefit of clergy before.

To process the additional workload during the current fiscal year and the next year with no additional personnel—and we are not asking for additional personnel for this important function, even though my friend Ed Worthy winces every time I say it because he is in charge of that division—we have modified and will find it necessary

to continue to modify our normal examination procedures with respect to certain registration statements, reports, and other documentary material filed with us.

We recognize that this entails a certain amount of danger and will therefore limit this to those areas where the Commission believes the risk to the public is smallest and not unreasonable.

In my letter I explained the reason for this decision. We recognize the fiscal position of the country, our international commitments, and our growing domestic commitments, and we felt we had to live in the real world. It is for these reasons that we have kept our request to the barest minimum.

I have touched on the material on page 9 of my opening statement. Maybe I can spare you some of the details except for some of the illustrations.

ENFORCEMENT SEMINARS

We invited the staffs of every State securities commission to attend our annual 2-week staff enforcement training program in Washington last year. Approximately 35 State enforcement personnel and three Canadian officials attended the program.

We have also encouraged each of our regional offices to conduct area enforcement seminars at which our local staffs, personnel of State securities commissions, postal inspectors, Federal, State, and local prosecutors, and local representatives of such self-regulatory bodies as the NASD, met to discuss regional enforcement problems and to devise means of increased cooperation and communications.

I am gratified to say I have received many letters of gratitude and appreciation from State and Canadian administrators, as well as other enforcement officials. In no small measure, this program has been effective because, as I have indicated, I asked Commissioner Owens to undertake this job and he goes to all of these seminars, he participates fully in all of them. They have proved to be very effective.

We have had in the past several months one in Fort Worth. Mr. Boltz is here and can tell you about it. He may not know that I have received letters from more people which I do not want to show him because he might ask for a raise. We have had seminars in Washington, D.C., Chicago, Boston, San Francisco, and Seattle, and others are now planning similar meetings.

We are also continuing to encourage a mutual exchange of information among the Commission and other enforcement agencies, and particularly at the State level with the State securities administrators and the State insurance administrators, as well as the local prosecutors.

As you know, we gather information each year with respect to a great many people who have been involved in one way or another in securities problems, and we publish this information, not for general public consumption but it is available to all enforcement agencies throughout the country. I think now we probably have something like 76,000 names in that compilation. It is a tremendous effort, but it is very useful.

EXAMPLES OF COORDINATION

Significant progress has also been made in coordinating the administration of examinations given to securities salesmen by various bodies. The Securities Acts Amendments of 1964 authorize and direct the

Commission to set qualification standards, including examinations, for persons associated with broker-dealers that are not members of the National Association of Securities Dealers (NASD).

To avoid duplicate qualifying examinations, the Commission determined to grant reciprocity to any securities examination that meets its general standards. A majority of the 36 States which require salesmen to pass a general securities examination, and the NASD, now also grant reciprocity to the Commission's examination. This is an important step toward the development of a truly uniform securities examination which would save prospective salesmen and their employers time, effort, and money. Also, it tends to provide for an examination of high caliber by the use of all of these organizations.

We have in mind that such an examination would cover a core of basic subjects with appropriate supplements to take care of the problems of the particular jurisdiction. This is another aspect of our efforts at coordination.

We have also developed forms for registration of broker-dealers designed to achieve the same purpose and those forms have received the commendation and acceptance of the North American Securities Administrators.

COMPUTER APPLICATION

In January 1968, a proposed rule was distributed to industry for comment regarding a proposed revision of the form of the annual report filed with the Commission by registered management investment companies—except those issuing periodic payment plan certificates and small business investment companies. The proposed revision would amend the present form, effective for fiscal years ending on and after December 31, 1967, and require attachments so that data furnished to the Commission will be in a form readily and immediately adaptable for electronic data processing purposes. Essentially it is designed to get the information requested in such form that it can be put into the computer almost immediately.

We will be able to record and maintain, and retrieve and analyze, much more efficiently pertinent financial data for use by the Commission and by others. It will also enable us to screen in a much more rapid way, and on a continuing basis, the information contained in the annual reports to ascertain areas of information and the companies where problems may exist.

PROPOSED ANNUAL INCOME AND EXPENSE REPORT

On February 1, 1968, we released for comment a rule which provides that registered broker-dealers who carry public customer accounts shall file annual income and expense reports with the Commission or with a registered self-regulatory organization which will transmit the reports to the Commission. These reports will provide at different levels, depending upon the volume of business and the type of business of the broker-dealer, comprehensive financial data on a continuing basis so that up-to-date information will be available to the Commission and to others who have responsibility in these areas.

One of the purposes we hope will be served by these reports will be to provide to us and to the others continuing industry-wide information

concerning the amount, breakdown, and trends of income and the changes in them as well as the expenses properly allocated to those items of income. This will permit the Commission and the institutions, as well as the members of the industry, to assess in an informed way, and with current data, the financial impact of developments now occurring in all of the securities markets, and any proposals, whether made by the Commission or by others, for changes in the rules or in the practices of the organizations and the firms serving those markets.

MUTUAL FUND REPORT AND PROPOSED LEGISLATION

Finally, I think it may be appropriate to tell you briefly what I know about the current situation on our mutual fund report and proposed related legislation.

On December 2, 1966, the Commission submitted to the Congress its report evaluating the policy implications of the growth of the investment company industry since 1940. We thereafter recommended some modest legislation designed to meet the major problems it found. The report concluded that mutual funds and other investment companies offer a sound and useful investment medium for the public, but that their dramatic growth in recent years has created problems which require attention by the Congress, the Commission, and the industry.

In May of last year we submitted to the Congress our legislative proposals. Hearings were held in the Senate on S. 1659, which reflects those proposals, in July and August and again in November by the Senate Banking and Currency Committee, and in October by the House Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce.

Further hearings have been scheduled by the latter subcommittee, I think beginning next week.

In the course of my testimony at the hearings on the House bills, I testified, in response to questions from members of the subcommittee, that a study of the growing institutionalization of the securities market is not only desirable, but is necessary and urgent.

On December 4, a joint resolution was introduced by Congressmen Moss and Keith directing the Commission to make a study and investigation of the activities of institutional investors in the securities markets. We have been discussing the need for, and the manner of conducting the study with all industry groups. I can now report to this committee that there is substantial agreement from all groups affected, banks and insurance companies, mutual funds, and so forth, and that some of the industry people have already been in touch with the Congressmen and Senators who are concerned with this matter.

As soon as action on the resolution has been completed, I will submit for your consideration a proposed operating budget for the study. We hope that this committee will make it possible for the Commission to conduct and complete the study which we believe is essential for the continued health and vitality of the securities markets and the economy.

Gentlemen, this concludes my statement. My colleagues and I will try to answer any questions.

Mr. EVINS. It is a very fine statement, Mr. Chairman. You are articulate, and you are knowledgeable in this field.

Mr. COHEN. Thank you.

Mr. EVINS. Your complete statement will be included in the record at this point, and your letter.

(The statement and letter follow:)

Mr. Chairman and members of the committee, it is a pleasure for my fellow Commissioners and for me to be here with our staff to discuss with you the programs, activities and the financial requirements of the Commission for the fiscal year beginning next July 1.

I have already sent you a letter discussing our budget requirements for next year. I realize that the letter was lengthy, and for this I apologize. The problems we face are difficult, complex, and growing, and I felt an obligation to explain them clearly and fully.

I will not repeat what is set forth in the material we sent you. I will simply highlight the situation in which we now find ourselves, describe briefly our request, and answer questions you may have.

The total amount of our request for next year is $17,903,000. Our adjusted appropriation for this year, excluding $496,000 for rental and purchase of our computer, is $17,234,000. The amount we are seeking, therefore, represents an increase of $669,000 over this year's adjusted appropriation.

The principal portion of this additional amount is $344,000 for mandatory pay increases. The remainder of the requested increase consists of $206,000 for 25 additional positions, and $119,000 for other expenses.

The Commission anticipates receiving fees of $11.8 million next year as compared with $11.7 million this year. The Commission is recovering about 66 percent of its cost for this year as compared with 40 percent in fiscal 1966. All revenue collected by the Commission is, of course, deposited in the general fund of the Treasury.

Before describing our request for the 25 positions, I should take this opportunity to describe the general climate and the accelerated activity in the securities industry today which compels the Commission to exercise greater vigilance and expend greater efforts in regulatory and enforcement matters.

THE SECURITIES MARKETS TODAY

Recent years have seen a startling growth in the number of investors, number of securities transactions, volume and value of securities traded on and off the stock exchanges, as well as a dramatic growth of institutional investors and changing trends in the form and manner of investment management.

There are now some 24 million investors compared with 17 million in calendar 1962.

Average daily volume on the New York Exchange has grown from 3 million shares in 1962 to over 10.1 million in 1967.

Since January 1, 1968, the volume has increased further and the exchanges have found it necessary to shorten trading hours.

The American Stock Exchange and regional exchanges have also been exceptionally active. On one recent day, the American Stock Exchange volume exceeded 10 million, as compared with a daily average of 2,800,000 shares in calendar 1966 and 2,200,000 in 1965. A new record monthly trading high was established in January despite eight shortened trading days.

This activity, coupled with generally rising stock prices, has resulted in a nearly 200 percent gain in the total market value of trading on all exchanges—from $57 billion in 1962 to $168 billion in 1967.

From year to year, the increase in dollar volume has never been less than 16 percent. Moreover, the dollar value of trading in calendar 1967 reached $168 billion, or an increase of 31 percent over the preceding year.

The increase in 1967 is partially due to the increased activity of financial institutions. They effected $12.3 billion of common stock purchases and sales in the third quarter of 1967, a new record. This compares with a quarterly rate of $8.1 billion in 1966 and $3.1 billion in 1962.

INVESTMENT COMPANY PROGRAM

We are seeking funds for five additional positions in the Division of Corporate Regulation to met the increased workload in the regulation of investment companies.

Except for a few additional secretarial positions in the past 3 years, the number of personnel assigned to this task has not increased despite substantial increases in workload. For example: Registration statements and post-effective amendments for financing increased about 30 percent; and annual and periodic reports increased about 10 percent. A total of 108 new investment companies registered with the Commission in 1967 as compared with 50 new companies in 1965. We expect an additional 150 new companies to register with the Commission next year. For the 7 months ending January 31, 1968, 83 companies registered with us as compared with our estimate of 125 for this year. The trend toward the development of new types of investment companies suggests that our estimate may be understated.

Although our examination processes have been streamlined, we have reached a saturation point. The additional personnel are needed to meet not only the increase in the review of filings and reports but to respond promptly to the ever-increasing number of problems requiring the development of new policy positions and rules under the 1940 act. The additional personnel are required to expedite the conduct of necessary investigations. To illustrate the significance of this activity. I might state that as an outgrowth of inspections of investment companies, about $3.9 million has been returned to investors either directly or indirectly during the last 4 years as compared with a cost of $1.9 million for conducting all inspections and investigations of invesment companies during that period.

In addition to the arithmetic increases, we are experiencing the advent of a number of new concepts within the investment company industry. For example: In the past year, a number of "capital leverage" companies, a totally unique type of investment medium, were organized. This type of investment company offers two separte securities each with a distinct, different, and contradictory investment objective in a common pool of securities, one for growth and the other for income. Another relatively new type of investment company is the "speculative" or "hedge" fund, to which I adverted in my letter, which is deliberately designed to use puts, calls, straddles and to engage in short term trading and similar techniques. I should also refer to what is perhaps the newest type—the multiadviser fund. In this form, the fund manager allocates varying and changing portions of the portfolio for separate management by unaffiliated subinvestment advisers who compete with one another in terms of performance, objectives, and other results. These developments and the growing interest in mutual funds by other financial and nonfinancial institutions and business organizations have required and will continue to require ever larger portions of time and effort of our staff and of the Commission.

ECONOMIC AND STATISTICAL RESEARCH

In the area of economic and statistical research, nine additional positions are requested for the Office of Policy Research for the purpose of extending in scope and detail economic and statistical data pertaining to the capital markets.

The Commission conducts some economic research to assist it in the fulfillment of its responsibilities. At the request of the Bureau of the Budget, the Commission conducts and publishes other regular studies alone or in conjunction with the efforts of other agencies. This information is useful to and needed by various branches of the Government and by industry. The projects for which the additional personnel are requested for 1969 include the following:

Information on private placements and retirements of securities should be made more complete and timely not only to provide the Commission with information important to the fulfullment of its responsibilities but also to meet the need for such information by the Government and by the business community.

More detailed and prompt information concerning liquid assets of corporations is needed so as to improve the calculation of liquidity ratios, which would be useful in analyzing and projecting credit requirements and the ability of the capital markets to meet them.

Expansion and improvement of the Commission's program pertaining to institutional participation in the securities markets is essential to obtain more current and complete information on institutional activity. At the present time our coverage of statistical data concerning institutions is limited in scope and confined to mutual funds, uninsured private pension funds, and insurance companies. The information currently available for these groups other than mutual funds is

on an aggregate basis contained in quarterly reports. We believe it important to extend our efforts so as to obtain this informaion from other institutional groups; e.g., State and local pension funds, nonprofit organizations and personal trust funds, and to obtain monthly rather than quarterly data on transactions in the various classes of securities. I should emphasize that our request does not contemplate a comprehensive study of all institutional groups. What is contemplated is merely a modest improvement of our existing limited statistical program. There is pending in the Interstate and Foreign Commerce Committee, a resolution which would authorize a comprehensive study of the growth and activities of all types of institutional investors, and the effects of this growth on the securities markets and on the economy, a subject which I will cover later on in my statement.

COMPLAINTS AND INQUIRIES

For 1969, four clerical positions are requested for the Division of Trading and Markets to meet the continuing upsurge in complaints and inquiries as well as provide prompt and responsive replies to the public.

The Division responds to inquiries and complaints by mail, using form letters where appropriate, and by telephone and personal interviews. In the performance of this function, the Division uncovers leads to securities violations and provides the public with information and advice consistent with the Commission's statutory authority. The public's need for prompt responsive replies, the assistance provided to other offices and divisions by the complaint processing section, the complexity of the general complaints and inquiries and the analysis required to respond have increased materially. This function is also performed by other divisions of the Commission's staff. We are, however, limiting our request to the Division of Trading and Markets because of the greatly increased workload developing in that Division.

REGULATION OF EXCHANGES AND OVER-THE-COUNTER MARKET

Our Office of Regulation in the Division of Trading and Markets carries out the Commission's continuing responsibilities for regulation and oversight of the exchange and over-the-counter markets.

As mentioned previously, the securities markets have been subjected to and are continuing to experience an unprecedented degree of growth as well as change. These factors require the Division to devote time and effort to basic studies of the mechanisms and procedures of the markets and of those who operate within them, to enable it to work with the exchanges, the NASD and other interested groups in modifying or improving their rules and our own which govern securities trading. Because of staff limitation, the Commission has not been, and is not now, able to keep fully abreast of many significant changes which are occurring in the securities markets. We are limiting our request to two additional positions so that the Commission may improve somewhat its ability to perform some of its regulatory tasks in a more timely and effective fashion and, in the long run, at less expense to the taxpayers and the regulated industry.

OTHER ADDITIONAL PERSONNEL

I have indicated the four programs for which we are requesting 20 positions in 1969. The remaining five positions are allocated as follows: (a) one investigator position in the Division of Trading and Markets to relieve senior attorneys from the more routine, time consuming but necessary chores involved in investigations; (b) two positions in the Division of Trading and Markets to carry out more effectively the regulation of broker-dealers who are not members of the NASD; and (c) two positions for the Office of Data Processing to meet additional regulatory and enforcement computer applications.

I would also like to highlight certain activities and explain briefly a few programs we have or will be instituting shortly.

We have estimated that 2,000 registration statements for financing from issuers other than investment companies will be filed with us this year as compared with 1,534 filed in the last fiscal year. For the 6 months ending December 31, 1967, 1,050 statements were filed as compared with 571 for the same period last year—an 84 percent increase. There has also been a sharp increase in resort to the securities markets by smaller and unseasoned companies which have not heretofore filed any material with the Commission. To process the additional

workload during the current fiscal year and next year with no additional personnel—and we are not asking for additional personnel for this important function—we have modified and will find it necessary to continue to modify our normal examination procedures with respect to certain registration statements, reports and other documentary material filed with us. We recognize that this entails a certain amount of danger and will, therefore, limit this to those areas where the Commission believes the risk to the public is smallest and not unreasonable.

During the past year, the Commission has extended its program to coordinate its responsibilities and efforts with those of the States, self-regulatory organizations and other enforcement agencies. We have realized some savings and we hope to realize additional savings, not only to the Commission and other governmental units involved but to the business community; and we have been able to improve the overall enforcement effort. We invited the staffs of every State securities commission to attend our annual 2-week staff enforcement training program in Washington, D.C. Approximately 35 State enforcement personnel and three Canadian officials attended the program. We have also encouraged each of our regional offices to conduct area enforcement seminars at which our local staffs, personnel of State securities commissions, postal inspectors, Federal, State, and local prosecutors and local representatives of such self-regulatory bodies as the National Association of Securities Dealers meet to discuss regional enforcement problems and to devise methods to increase cooperation and communication among State, Federal, and local agencies and others in fulfilling their respective responsibilities. Such seminars have been sponsored in the past few months by our offices in Fort Worth, Washington, D.C., Chicago, Boston, San Francisco, and Seattle and others are now being planned by our remaining regional offices. We are also continuing to encourage a mutual exchange of information among the Commission and other enforcement agencies.

Significant progress has also been made in coordinating the administration of examinations given to securities salesmen by various bodies. The Securities Acts Amendments of 1964 authorize and direct the Commission to set qualification standards, including examinations, for persons associated with broker-dealers that are not members of the National Association of Securities Dealers (NASD). To avoid duplicate qualifying examination, the Commission determined to grant reciprocity to any securities examination that meets its general standards. A majority of the 36 States which require salesmen to pass a general securities examination, and the NASD, now also grant reciprocity to the Commission's examination. This is an important step toward the development of a truly uniform securities examination which would save prospective salesmen and their employers time, effort and money. Such an examination could cover a core of basic subjects, with appropriate supplements or subjects such as State law, NASD rules, and exchange rules.

In January 1968, a proposed rule was distributed to industry for their comments regarding a proposed revision of the form of the annual report filed with the Commission by registered management investment companies (except those issuing periodic payment plan certificates and small business investment companies). The proposed revision would append to the present form, effective for fiscal years ending on and after December 31, 1967, attachments to be used to furnish data to the Commission in a form readily and immediately adaptable for electronic data procesing purposes. This will enable the Commission to record and maintain, and retrieve and analyze more efficiently, pertinent financial data for use by the Commission and others. It will also enable the Commission to screen on a continuing and rapid basis the information furnished in the annual reports to ascertain the areas of information and the companies in which problems exist.

On February 1, 1968, we released for comment a rule which provides that registered broker-dealers who carry public customer accounts shall file annual income and expense reports with the Commission or with a registered self-regulatory organization which will transmit the reports to the Commission. The proposed reports will provide comprehensive financial data on a continuing basis so that up-to-date information will be readily available to the Commission, the national securities exchanges, and the National Association of Securities Dealers in connection with the performance of their respective responsibilities. One of the purposes to be served by the information in the reports will be to provide on a continuing, industrywide basis the amount, breakdown, and

trends of income derived from the various activities which make up the securities business and the expenses properly allocable to such income. This will permit the Commission and the institutions as well as members of the industry to assess in an informed way, and with current data, the financial impact of developments now occurring in all the securities markets, and any proposals by the Commission or by others for changes in rules and practices, on the organizations and firms serving those markets.

Finally, I wish to present current information on our mutual fund report and proposed legislation. On December 2, 1966, the Commission submitted to Congress its report evaluating the policy implications of the growth of the investment company industry since 1940 and recommended legislation designed to meet the major problems it found. The report concluded that mutual funds and other investment companies offer a sound and useful investment medium for the public but that their dramatic growth in recent years has created problems which require attention by the Congress, the Commission, and the industry.

On May 1, 1967, the Commission submitted to Congress its legislative proposals. These proposals were introduced in the Senate as S. 1659 and in the House of Representatives as H.R. 9510 and H.R. 9511. Hearings were held in July and August 1967, and again in November 1967 by the Senate Committee on Banking and Currency, and in October 1967 by the House Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce. Further hearings have been scheduled by that subcommittee. In the course of my testimony at the hearings on H.R. 9510 and H.R. 9511, I testified, in response to questions from members of the subcommittee, that a study of the growing institutionalization of the securities markets is not only desirable but necessary.

On December 4, Congressmen Moss and Keith introduced a joint resolution directing the Commission to make a study and investigation of the activities of institutional investors in the securities markets. We have been discussing the need for, and the manner of conducting, such a study with all industry groups. I can report to this committee that substantially all of them have agreed as to the importance and urgency of such a study and as to the manner in which it should be conducted. As soon as action on the resolution has been completed, I will submit for your consideration a proposed operating budget for the study. We hope that this committee will make it possible for the Commission to conduct and complete this study which is so necessary to the continued health and vitality of the securities markets and the economy.

Gentlemen, this concludes my statement. My colleagues and I will try to answer any questions you may have.

SECURITIES AND EXCHANGE COMMISSION,
Washington, D.C., February 16, 1968.

Hon. JOE L. EVINS,
Chairman, Subcommittee on Independent Offices Appropriations,
House of Representatives,
Washington, D.C.

DEAR MR. EVINS: Attached is the 1969 budget estimate of the Securities and Exchange Commission in the amount of $17,903,000. Our adjusted appropriation for this year, excluding the $496,000 for rental and subsequent purchase of the computer, is $17,234,000. The increase of $669,000 relates to the items shown below:

Cost of 25 additional positions	$206,000
Mandatory pay increases	344,000
Other expenses	119,000
Total	669,000

We realize the importance of keeping expenditures to a minimum to meet the Nation's international commitments and its needs on the domestic front. Nevertheless, continued confidence in our securities markets which is so essential to the growth of our economy compels us to ask for additional manpower in an attempt to cope with the problems generated by significant changes in the structure and nature of the securities markets from both a regulatory and enforcement standpoint. Our workload continues to increase at a rate which we did not anticipate and with which we are unable to cope under present manpower limita-

tions. My fellow Commissioners and I have reviewed our operations and have taken every measure to alleviate the situation, not only for next year, but also for the current year. We have reached the saturation point and the only alternative is that we be permitted to expand our staff modestly to a number which we hope will permit us to meet only the most urgent problems and our related responsibilities to the investing public.

The Commission anticipates revenue of $11.8 mililon next year as compared with $11.7 million this year. The Commission is recovering about 66 percent of its cost for this year as compared with 40 percent in fiscal 1966. All revenue collected by the Commission is, of course, deposited in the general fund of the Treasury.

Before describing our request for the 25 positions, I should take this opportunity to describe the general climate of the securities industry today which compels the Commission to exercise greater vigilance in regulatory matters and vigorous enforcement effort.

THE SECURITIES MARKETS TODAY

Recent years have seen a startling growth in the number of investors, number of transactions, dollar volume, and the market value of securities traded on the stock exchanges. There are now some 24 million investors compared with 17 million in calendar 1962. From 1962 through 1967, average daily volume on the New York Exchange has grown from 3 million shares to over 10.1 million. The monthly average in calendar 1967 was more than 200 million shares. Since January 1, 1968, the volume has further increased and the exchanges have found it necessary to shorten trading hours. The American Stock Exchange and regional exchanges have also been exceptionally active. On one recent day, the American Stock Exchange volume exceeded 10 million, as compared with a daily average of 2,800,000 shares in calender 1966 and 2,200,000 in 1965. This activity, coupled with generally rising stock prices, has resulted in a nearly 200-percent gain in the total market value of trading—from $57 billion in 1962 to $168 billion in 1967. From year to year, the increase in dollar volume has never been less than 16 percent. Moreover, the dollar value of trading in calendar 1967 reached $168 billion, or an increase of 31 percent over the preceding year. While the dollar increase in trading may not seem by itself to call for more manpower, a great deal of the increase is due to the growing importance of institutional investors and, in many cases, more rapid portfolio turnover by the institutional managers, This development is new, and will continue, generating new and unique problems. The additional personnel will help us to identify the problems and hopefully, to consider possible solutions.

The increase in 1967 is partially due to the record activity of financial institutions. They effected $12.3 billion of common stock purchases and sales in the third quarter of 1967, a new record. This compares with a quarterly rate of $8.1 billion in 1966 versus only $3.1 billion in 1962.

The number of shareowners of U.S. corporations at the latest census in early 1965 was estimated at 24 million. This was an increase of approximately 7 million since 1962 and almost 16 million over the past decade. The number of stockholders continues to grow. In addition, the United States and foreign capital markets have become increasingly interdependent and American and foreign institutions are more frequently raising funds in one anothers' countries.

The growth of the industry entails not merely a quantitative but also a qualitative change in the functioning of the markets. Growth and change are moving ahead rapidly. The rising participation of institutional investors, the present and anticipated impact of automation, instant communications, and electronic data processing, and many other factors have raised serious problems both for the Commission and the industry.

I should like to present current information on our registration statement activity, for which no additional personnel are requested for next year. It is estimated that 2,000 registration statements for financing from other than investment companies will be filed with the Commission this year. For the 6 months ending December 31, 1967, 1,050 statements were filed as compared with 571 for the same period last year—an 84-percent increase. In order to process the additional workload during the current fiscal year and next year, it will be necessary to modify further our normal examination procedures of the various filings and reports. This limited examination process will be applied in those areas where the Commission believes the risk to the public is a reasonable one.

Despite this limited examination, the review of a number of annual and periodic reports may be deferred because of manpower requirements.

The succeeding pages highlight the Commission's request for the 25 positions.

INVESTMENT COMPANY PROGRAM

For 1969, five positions are requested for the Division of Corporate Regulation to meet the increased workload in the regulation of investment companies.

Except for a few additional secretarial positions in the past 3 years, the number of personnel assigned has not increased despite increases in workload. For example: Registration statements and posteffective amendments for financing increased about 30 percent; annual and periodic reports increased about 10 percent; and applications for exemption have increased about 10 percent. Furthermore, a total of 108 investment companies registered with the Commission in 1967 as compared with 50 companies in 1965. We expect an additional 125 and 150 companies to register with the Commission in this year and next year, respectively.

Although the examination processes have been streamlined, the saturation point for greater productivity has been reached. The additional personnel are needed to meet not only the increase in the review of filings and reports but to respond promptly to the ever-increasing number of legal interpretations of the act. The additional personnel will be utilized also to expedite the conduct of investigations. As an outgrowth of inspections of investment companies, private investigations conducted resulted in the return of $3,877,664 to investors either directly or indirectly during fiscal years 1963–67. During this same period, approximately $1.9 million was spent in the inspection and investigations of investment companies.

In addition to the arithmetic increases in registered investment companies, fiscal 1967 witnessed the advent of a number of new concepts within the investment company industry. In the past year, filings were made by a number of "capital leverage" companies, a totally unique type of investment media. This type of investment company offers two separate securities each with a distinct investment objective of either growth or income. Because of the unique features of this type of company, the time required to process its filings is much greater than the conventional mutual fund.

A second type of investment company is the "speculative" or "hedge" fund. This type of company, as the term implies, engages in speculative trading, such as the purchase and sale of securities within short periods of time, the issuance, purchase, and sale of "puts" and "calls." Obviously, this type of company presents a much greater risk factor both to the investor and, in general, to the orderly functions of the securities markets. For this reason, the activities and practices of speculative companies must be more closely followed than the normal investment company.

ECONOMIC AND STATISTICAL RESEARCH

For 1969, nine additional positions are requested for the Office of Policy Research for the purpose of extending in scope and detail economic and statistical data pertaining to the capital markets.

The projects for which the additional personnel are requested for 1969 involve research affecting both direct Commission responsibilities and the more general Government statistical programs. Specifically, the additional personnel are needed in the following areas:

1. *Improved information on new issues financing.*—The volume of securities financing in recent years has been increasing dramatically and its compensation is changing with the changing capital needs and market conditions. Some current gaps in our information—including inadequate coverage of private placements, small issues, and retirements of securities—need to be filled.

2. *Improved information on institutional activity in the securities markets.*—To improve our current knowledge of institutional activity, this Office has developed a plan to expand and improve the Commission's program pertaining to institutional participation in the securities markets. At the present time our coverage of institutions is limited in scope and confined to mutual funds, uninsured private pension funds, and insurance companies. The information currently available for the groups other than mutual funds is on an aggregate basis contained in quarterly reports. We expect to extend this information to other institu-

tional groups, and to obtain monthly rather than quarterly data on transactions in the various types of securities such as stocks and bonds. Despite the additional personnel requested, we will not be able to undertake the total spectrum of this project. Such a task would require substantial manpower to undertake a comprehensive study of the growth and activities of all types of institutional investors. Serious policy decisions will be required to avoid damage to the investor and public interests and insure the continued health and well-being of the securities industry.

3. *Improved financial information on business firms.*—The Commission is designated by the Bureau of the Budget as the agency best suited to collect certain financial information from business firms. The specific project for which improved and more timely data are required is the determination of working capital estimates of corporations. Specifically, more detailed and more timely information is needed pertaining to changes in the financial position of these corporations.

REGULATION OF NON-NASD BROKERS AND DEALERS

For 1969, two positions are requested for this program. The Securities Acts Amendments of 1964 impose an obligation on the Commission to develop qualification standards and rules of practice for broker-dealers who are not members of the NASD, comparable to those which relate to NASD members; to inspect these nonmembers for compliance with the standards and rules developed; and, in general, to insure that there is comparable regulation of NASD and non-NASD broker-dealers. The Commission is authorized to impose fees on these nonmember broker-dealers in order to recover fully the cost of administering this program—a self-sustaining activity. During fiscal 1967 the Commission collected about $500,400. Of this amount, approximately $231,700 is applicable to fiscal 1966. It is estimated that about $280,000 will be collected in fiscal 1968 and $300,000 in fiscal 1969. These fees, as well as other revenue collected by the Commission are credited to the general fund of the Treasury.

During the past fiscal year, the Commission adopted rules establishing standards of general business conduct, suitability of recommendations of broker-dealers to customers, supervision of associated persons, regulation of discretionary accounts, and recordkeeping requirements.

The Commission's general securities examination was administered by the NASD to 2,368 associated persons of nonmember broker-dealers during the last fiscal year, both in the United States and abroad.

A program for the inspection of non-NASD broker-dealers which focuses on compliance with the Commission's new rules and regulations commenced in 1967. The Commission will attempt to achieve comparability with the NASD inspection program by including inspections for compliance with the Commission's rules in 1969.

Within the past year a number of broker-dealers have registered with the Commission in order to sell variable annuities. It is anticipated that many more companies and individuals (including large insurance companies which utilize the services of thousands of salesmen) will also register as broker-dealers in fiscal years 1968 and 1969 for this purpose.

Regulation of the activities of these companies and their salesmen will substantially increase the responsibility of the branch of non-NASD regulation if such firms choose not to become members of the NASD.

For 1969, the personnel of the branch will be (1) reviewing additional inspection reports; (2) developing additional rules and regulations; (3) conducting inspections and investigations of non-NASD broker-dealers; and (4) participating in disciplinary proceedings. In connection with the latter, the Commission can proceed directly against an employee of a broker or dealer in lieu of proceeding against the entire firm. The Commission can also impose sanctions short of revoking registration, such as a temporary suspension, censure, or bar a person directly.

COMPLAINTS AND INQUIRIES

For 1969, four clerical positions are requested for the Division of Trading and Markets to meet the continuing upsurge in complaints and inquiries as well as provide prompt and responsive replies to the public.

The Division responds to inquiries and complaints by originally prepared letters, form letters, telephone calls, and personal interviews. In the performance of this function, the Division uncovers leads to securities violations and provides the pub-

lic with information and advice consistent with the Commission's statutory authority. The public's needs for prompt responsive replies, the assistance provided to other offices and divisions by the complaint processing section, the complexity of the general complaints and inquiries and the analysis required to respond have increased materially.

REGULATION OF EXCHANGES AND OVER-THE-COUNTER MARKET

For 1969, two additional positions are required in the Office of Regulation in the Division of Trading and Markets to meet the Commission's continuing responsibility pertaining to the exchange and over-the-counter markets.

As mentioned previously, the securities markets have been subjected to and are continuing to experience an unprecedented degree of growth as well as change. These factors coupled with the expanded participation of institutional investors has placed tremendous strains on the securities markets. These developments require the Division to devote time and effort to basic studies of the mechanisms of the markets, to enable it to work with the exchanges, the NASD and other interested groups in modifying or improving the rules which govern securities trading. To achieve these objectives, the Office of Regulation has initiated a number of major studies. At present the Office has sufficient personnel to give these projects only limited attention. Each of these studies deal with questions that have become a permanent part of the Commission's regulatory responsibilities. It is imperative that the Commission be in a position to insure that matters raised in these studies are resolved in a fashion which best serves the public interest and the protection of investors.

The Commission plans to employ the requested additional personnel in a series of continuing special studies, which will form the basis for a number of regulatory changes. Two of these studies are described below:

1. *Institutional membership on national securities exchanges.*—The present rules of the New York Stock Exchange (NYSE) prevent institutional investors—mutual funds, insurance companies, pension funds, etc.—from being members. Since most of these institutions deal primarily in NYSE-listed securities, the managers of many of them consider that membership on the exchange is logical and appropriate on the theory that such membership would result in enormous savings in brokerage commissions to these institutions. At the present time the managers of four mutual fund groups are represented on the Pacific Coast Stock Exchange (PCSE) by wholly owned broker-dealer subsidiaries. The NYSE is not persuaded that this is a healthy development and considers this question one of the most significant matters which the financial community will have to face in the next few years. Among the questions which will have to be considered before this problem can be resolved are the possible effects of institutional membership on the Nation's trading markets and those who do business in those markets as against the benefits to shareholders of mutual funds and to beneficiaries and owners of other institutions; and the impact of such changes on regional exchanges and on the financial stability and viability of the various segments of the securities industry.

2. *Floor trading.*—As a result of rule changes regarding floor trading on the New York exchanges, the pattern of trading has changed. The recent highly active markets have also served to bring about changes in members' trading. This necessitates special studies to determine whether the present rules are adequate and achieve their objective.

OTHER ADDITIONAL PERSONNEL

I have indicated the five programs for which we are requesting 22 positions in 1969. The remaining three positions are allocated as follows: (*a*) One investigator position to relieve senior attorneys from the more routine, time-consuming, but necessary chores involved in investigations; and (*b*) two positions for the Office of Data Processing to meet additional regulatory and enforcement computer applications.

MANDATORY PAY COSTS

The requested increase of $344,000 includes (*a*) $179,000 for mandatory within-grade increases; and (*b*) $165,000 representing the difference between the 12-month cost of pay increases in 1969 as compared with the 9-month cost in 1968.

OTHER EXPENSES

For 1969 the additional amount requested is $119,000. This amount is required principally for increased personnel benefits resulting from pay increases, increases in the cost of postal and telephone service and office equipment for the requested additional personnel.

It is the unanimous opinion of the Commission that the positions requested are necessary if we are to fulfill our statutory responsibilities to protect the investing public.

Sincerely,

MANUEL F. COHEN, *Chairman.*

INSTITUTIONAL MEMBERSHIP ON NATIONAL SECURITIES EXCHANGES

Mr. EVINS. Mr. Chairman, in your budget I noticed some statements to the effect that on the west coast the securities market allows mutual companies to be members of the exchange; on the east coast they are not allowed to be members. Why the variance?

We know we must have some flexibility. Each exchange operates under its own rules. Out in the West they think it is desirable to let mutual companies have membership on the exchange, and in the East they oppose it. Are you the referee?

Mr. COHEN. Yes, and the issue was put to the Commission with respect to the membership on the Pacific Coast Stock Exchange—I believe that is what you have in mind—by an affiliate of a company which manages investment companies. At that time the Commission informed the stock exchange that that subject and certain related subjects were under very active study by the Commission. The Commission was not prepared to interpose an objection at that time, but indicated quite clearly that the whole subject matter would continue under further discussion, and that has occurred. Thus, the New York Stock Exchange has recently proposed to the Commission a number of changes in its commission rate structure. One of the changes—I should not say changes, but one of the aspects of its proposals is that institutions directly or by affiliates not be permitted to be members of a stock exchange.

Since the New York Stock Exchange cannot control the activities of other stock exchanges except indirectly, perhaps, they indicated that, if the Commision felt this was a worthwhile proposal, they were asking the Commission to enforce it so far as the other exchanges are concerned.

On the other hand, the other exchanges have moved in this direction—and this is only one aspect of it—to compete more effectively with the New York Stock Exchange for business in listed securities.

As you know, a great many listed securities, certainly the more active ones, are traded not only in New York but also on many of the regional exchanges. This was one way whereby the regional exchanges could compete. They could provide to broker-dealers in their own area, at somewhat less cost, access to listed securities. And then this developed into the situation where we have these very large mutual fund complexes which desired membership.

For example, one of the first ones that undertook this activity manages assets, I think, in the aggregate exceeding—I do not remember the exact figure—well over $5 billion, and the securities transactions in

that complex of funds are tremendous. The managers of that group felt that if they could become directly, or through an affiliate, a member of the exchange that they would receive a portion of the commission income which they could return to the funds in response to a responsibility which they felt they owed to the funds. This, in fact, occurred. That particular fund complex, I think in 1966, returned something like $3.1 million to the various funds under its jurisdiction.

Mr. EVINS. The mutual companies, with their large volume of holdings, could, if not control, to a large degree, influence the operations of the exchange.

Mr. COHEN. We are examining it. As a matter of fact, whether or not they have membership on the stock exchange, they have considerable influence because they are the largest investors, they are the most active investors. The turnover of portfolio securities in the mutual fund area is 35 percent, or better, as compared with the general average turnover of the entire stock exchange of about 16 percent. Their size and the size of transactions gives them tremendous power.

The problem you point to really is a competitive one in some respects. It also could affect the nature of the market. You are absolutely right.

As a consequence of our concern with all of these matters, and their consequences, the Commission for the first time in its history published proposals of this character of the New York Stock Exchange in a release for the purpose of soliciting the views of all interested persons. In the same release, we solicited comments on a Commission proposal which had been made to deal with at least one aspect of the group of problems involved. We are now receiving comments from all persons concerned—all exchanges, people in the securities business, and investors. We have extended the time for comment until April 1.

VOLUME OF TRADING

Mr. EVINS. Is the current thinking of the Commission that the large volume of trading is caused by the investment companies, or is it the affluence of the society with everybody having extra money in their pockets, because of the prosperity we are enjoying under this administration?

Mr. COHEN. I think it is both.

Mr. EVINS. It is a dangerous time in any event.

AVERAGE EMPLOYMENT—AUTHORIZED POSITIONS

Mr. JONAS. Mr. Cohen, you had my heart almost broken. I wiped away a silent tear worrying about your personnel losses. I think five different times you mentioned in your statement you are hurting for lack of people, that your rolls had gone down, down, down. Then I looked at the book and I got over that heart attack. I find instead of going down, you are going up. You have gone up from 1,360 people in 1967 to 1,405 in 1969 which you are asking for now; that is an increase——

Mr. COHEN. I mentioned a longer period, and I have the table here if I can give it to you, Mr. Jonas.

Mr. JONAS. I want to go back to the beginning.

Mr. COHEN. Fiscal 1964——

Mr. JONAS. Your biggest growth has been in the last few years.

Mr. COHEN. Let me give you the exact figures.

Fiscal 1964 we had minus 13; fiscal 1965, minus six; fiscal 1966, a tremendous year, minus 52; 1967, minus five.

Mr. JONAS. I get it up 12 in 1966.

Mr. COHEN. 1966 minus 52, the authorized positions for 1965.

Mr. JONAS. Then you started climbing.

Mr. COHEN. No, we have not climbed yet, we are still on the downgrade because 1967 is a minus five, 1968 minus two, and we are now asking an increase of 25 for 1969. This will be the first time we turn around.

Mr. JONAS. You may be talking about permanent positions.

Mr. COHEN. Yes, sir; authorized positions.

Mr. JONAS. I am talking about average number of employees and you have gone up 45 since 1967, if you get your 25 for next year. You went down 12, according to this table, from 1966 to 1967, then you went up 20 in 1968, and now you want to go up 25 more.

Mr. COHEN. In authorized positions, no, sir. Actually, I am glad you raised the point.

Mr. BUDGE. It is not in authorized positions.

Mr. COHEN. The numbers I am using are authorized positions; the numbers Mr. Jonas is using are not.

Mr. JONAS. I am using average employment.

IMPACT OF PUBLIC LAW 90–218

Mr. COHEN. I am glad you brought that up.

As you know, Public Law 90–218 froze a portion of funds available this year. I want to explain this just to indicate what we do and why there is this variance, which I do not think really reflects our problem.

We had a problem here that we had planned to buy our computer at a cost of $425,000. In the light of the freeze, we would have had to continue to rent the computer. It was clear that rental was not a most economical decision. The Budget Bureau, in effect, on behalf of the President, released $300,000 upon our commitment that we would make up the $125,000 by not filling some vacancies. We have had similar situations in prior times.

INCREASE IN AVERAGE EMPLOYMENT

Mr. JONAS. I do not think you have gone back far enough. You go back to 1960, the last 6 years you are up 416 people. You only had a thousand people in 1960.

Mr. COHEN. May I explain that?

On August 25, 1961, the Congress——

Mr. JONAS. Gave you 61 more.

Mr. COHEN (continuing) passed a resolution authorizing us to conduct a wide-ranging study of the securities markets.

Mr. JONAS. And gave you the 61 people.

Mr. COHEN. Yes, sir; and we did in fact engage practically a separate staff to conduct that study. The study was completed and submitted to the Congress in 1963, and then we went into our legis-

lative program, which continued through 1964, and that was, in part, the reason for the increase in personnel. Since 1964 our personnel complement has been decreasing despite the continual upsurge in workload. You have always got your finger on the right spot, though, Mr. Jonas.

GROWTH OF THE SECURITIES MARKETS

Mr. EVINS. You did not answer my earlier question.

What is the thinking of the Commission at this time as to what is causing this growth in the securities markets' transactions?

Mr. COHEN. I think it is a sort of fever which occurs every once in a while.

Mr. EVINS. We had this a few years ago and we had a special study of the securities market. Now we may need another special study?

Mr. COHEN. Yes. The study we are asking for now is not necessarily related to general market activities, although, obviously, since the institutions are involved in it and some of them are created deliberately to engage in short-term trading, or speculation as some people call it—so they are not only meeting a demand but fostering a demand. At the same time, many people who invest directly are affected by the fact the market has certain effects and they want to play the game, too. There is affluence in our society. There apparently is a substantial amout of excess savings.

Another instance of what I am saying perhaps can be gained from the fact that the insurance companies are moving into the mutual fund industry. The reason for that is that they have found over the past 10 years that they are losing in the percentage of personal savings allocated to insurance. Less and less straight life insurance is being sold and more and more of the insurance is being sold on a group or term basis, and people are using some of their excess moneys for investment funds. The insurance companies now want to move in so they have a wider shelf of merchandise, and also to recoup some of the losses they have suffered in the area of personal savings.

Mr. EVINS. Mr. Chairman, you made some reference in your statement that $3,877,000 was returned to investors because of investment-company inspections.

Mr. COHEN. Mr. Evins, I do want to make perfectly clear I do not think that we can really measure all our activities in terms of dollar savings. The actual savings to the American public as a result of our activities, I think is tremendous, but I can give you no figures on it. We are trying to be a little bit more alert in getting in on the cases before all of the horses are out of the barn.

FEES COLLECTED VERSUS COST OF OPERATIONS

Mr. EVINS. You also point out your fees bring in $11 million.

Mr. COHEN. Sixty-six percent of the cost.

Mr. EVINS. Sixty-six percent of the cost of operation. If other agencies did as well, they would be pretty well financed.

Mr. COHEN. We think we are not costing the taxpayer a great deal.

Mr. EVINS. When is the last time you revised upward your fees on your filings?

Mr. COHEN. About 2 years ago.

Mr. EVINS. We have been asking some of the other regulatory agencies about considering rescheduling of their fees. Generally, they have said it all goes back into the Treasury. We have thrown out the proposition if all of the independent agencies would propose one bill or resolution to allow them to use these fees in lieu of their own appropriations, I think it might be passed.

Mr. COHEN. I must say we could not have done it without the cooperation of the Congress because we had to get the 1933 act amended.

Mr. BUDGE. The origin of that increase was in this committee in 1965.

Mr. COHEN. Right.

ORGANIZATION OF THE COMMISSION

Mr. EVINS. Let's take a look at the chart, Commissioner. This is on page 121.

You have three main divisions: Division of Corporation Finance, Division of Trading and Markets, and the Division of Corporate Regulations. These are the main three?

Mr. COHEN. Yes.

Mr. EVINS. And you have nine field offices?

Mr. COHEN. Yes, sir; nine regional offices.

Mr. EVINS. Could the Commission give any comment on or off the record regarding the devaluation of the British pound as it affected the market? We saw a great surge of activity on the market at that time.

(Off the record.)

PRESENT MARKET SITUATION

Mr. EVINS. Back on the record.

This is a pretty speculative market at the present time; is it not?

Mr. COHEN. I have made a few speeches recently in which I have raised some questions about that. Of course, the word "speculation" for some is a pejorative term, for others it is only intended to mean short-term trading. But no matter how you describe it. I think it is fair to say all of us are concerned about it, concerned about where it is taking us. We have had some prior experiences when the market turned around rather dramatically, and a great many people were hurt. We would not like to see that happen again.

Unfortunately, or fortunately, depending on your point of view, many of the professional managers, and these you might find among the new younger men, think that any suggestion of the kind I have made is a reflection of age and that the economy is moving upward, investing should be aggressive, and there are a great many dollars to be made.

And the fact of the matter is that up until recently, some of them did pretty well.

Mr. EVINS. I think the Dow Jones average has been going down and the whole trend has been down for over a year.

Mr. COHEN. It is about a hundred points lower now than it was at the beginning of 1967.

SUSPENSION OF TRADING

Mr. EVINS. When can the Commission use its powers and suspend trading?

Mr. COHEN. If you mean generally, we cannot do that. We can recommend to the President that he do it, but that, as we read the statute, is designed to deal with an emergency situation, and I am not sure that people are prepared to agree that the present amount of trading and type of trading has as yet reached the emergency situation.

But beyond that, the Commission has the power to suspend trading for a limited period, for a period of 10 days, which we renew if necessary.

The Commission has used this device more frequently in recent years than in earlier years. This is something we come to with a great deal of reluctance because, once you freeze trading, it means people cannot sell as well as others not being able to buy. There is always the risk that somebody more sophisticated——

Mr. EVINS. The industry has cut down on the hours of operation themselves?

Mr. COHEN. That is right. They have just returned to the full schedule yesterday. This is because they themselves did not estimate the great affluence they have enjoyed in the last 2 years in the securities markets and if you speak to them they are very honest about it. They have been so busy selling and doing related things, they just have not had the time to develop the necessary back office operations, to purchase and to use the necessary machinery.

INSIDERS

Mr. WYMAN. You spoke of the tremendous effect on the market of purchases by the large companies, the mutuals, and so forth, and trustees of trust funds I presume. Any such purchase or sale order is usually preceded by a meeting and decision of the managers of that fund; is it not?

Mr. COHEN. Within a particular fund?

Mr. WYMAN. Yes.

Mr. COHEN. That varies.

Frequently it is done by a committee, sometimes it is delegated to an individual. He may do it subject to ratification or he may do it only after he has received authority. There are all kinds of ways in which it is done. That is, to give the order to a broker-dealer.

Mr. WYMAN. Yes.

When you see the folders that come out, and I presume your staff has seen them all before they come out, disclosing the holdings of some of these funds, 300,000 shares of Texaco or 700,000 of A.T. & T., one thing and another.

Mr. COHEN. Yes.

Mr. WYMAN. Somebody must know when those funds are going to sell or buy?

Mr. COHEN. Yes.

Mr. WYMAN. And you—do you make any attempt to check on whether insiders or persons in a position to know about these things have taken

advantage of them by buying and selling themselves a little bit ahead of the fund?

Mr. COHEN. Yes, in part.

Let me explain that. Certain insiders such as officers and directors are required to report their transactions in the securities of a company. If they are an officer or director of a fund, presumably they would be required to report transactions in the fund. This is more useful in the case of an industrial company.

In the case of a fund, it is very infrequent that the people who manage the fund own any shares of the fund, and what you are talking about is portfolio.

Mr. WYMAN. That is right.

Mr. COHEN. So we do not get that information except as it comes to us in other ways.

In the proposed legislation which is now pending before the House and on which hearings will be resumed next week, we have asked for specific rulemaking power with respect to purchases and sales of investment company portfolio securities by persons associated with such companies to be sure that there is not any advantage taken of the information which is gathered at the expense of the fund for the private benefit of the individuals involved. (See H.R. 9510 and H.R. 9511, section 9(b), and the Commission's report on the Public Policy Implications of Investment Company Growth, pp. 195–200, H. Rept. 2337, 89th Cong., second Sess.)

POTENTIAL ABUSES

Mr. WYMAN. Let me take a very simple situation and you correct me if I am wrong.

Let's assume one of the larger funds decides to buy 100,000 shares of Sperry Rand, and this decision is made on a Friday and so forth, and the order goes out, or it is known to be going out, the following week. Obviously they do not go out and buy 100,000 shares in 1 minute. This is bought in lots, I presume. But anybody in a position to buy Sperry Rand at the opening of the market on Monday, knowing it is going to be followed by concentrated orders for 100,000 shares, is going to make some points.

Mr. COHEN. There is no doubt about it. There is one thing I might say in talking about mutual funds again; there is a provision in the Investment Company Act, section 17(d), under which the Commission has adopted some rules.

In fact, that rule is now under consideration for amendment. If there are transactions, for example, by that fund in a particular security, transactions by certain other people whom I might, for want of a better word, refer to as affiliated persons, in the same securities it amounts to joint action, which is unlawful unless the Commission has first authorized it.

So, if there is something of that character with respect to those people going on, it is concealed.

Now I want to answer your question in every possible implication.

There is a possibility, however, that people associated with the manager have the information and either use it directly or pass it on

to somebody. This is a typical police job and we use typical ways of gathering information.

We have had some situations of that kind and we have dealt with them rather vigorously. But our tools are not as sharp as they should be and it is for this reason that we are asking for an amendment of the Investment Company Act, to which the industry has agreed, to give us additional authority.

Now, it goes beyond the people associated with the fund. The order is given to a broker-dealer and people associated with the broker-dealer may take advantage of it. There is a potential here for real difficulty.

I do not think we have enough evidence to indicate this is a major problem. This is something that we watch all the time.

So far as the big ticket transaction, 100,000-share transactions, for example, are concerned, I want to refer to something you said about them being sold in small lots. Frequently this is the case. Most often in a big transaction they engage in what is called a block transaction. They go to a particular broker and say they have 100,000 or 10,000 shares to sell. That broker-dealer will, through his own clients, sell all or, associating himself with another broker-dealer, find the other side of the transaction. In consequence, it is effected practically in-house. They then bring it to the stock exchange and cross it on the tape.

However, I do not want to leave an implication that there is a great potential here for abuse, nor do I have any doubt that some of it probably goes on. We do learn of some of these things but our tools are not as sharp as they should be.

JURISDICTION OF COMMISSION

Mr. WYMAN. You could control the broker-dealer or any employees of the broker-dealer that passed on this kind of information because I can see that that would be probably illegal under your statutes or regulations. You could not do anything, could you, about it, and there would not be any illegality of the secretary to the manager of one of these funds who knew before even the board meeting was called that the manager was going to recommend this step by the direction of the fund who called Joe Smith in St. Louis and said, "You better get in on Sperry Rand?"

Mr. COHEN. We would take the position, I think, Mr. Wyman—I do not want to bind all of my colleagues here but I think that we would all agree that that would be a violation of the law. We would have authority to deal with it.

Mr. WYMAN. Is that so?

Mr. COHEN. Yes, sir. As a matter of fact, there is a case under State law, not under the Federal laws, where an assistant to the president of a Delaware corporation did something of this character. What he did was to use some information he gathered in his job as assistant to the president to trade in securities. The courts made him disgorge his profits.

Mr. WYMAN. Let us assume that X is executor of an estate, a big estate, and has a substantial holding. He decides that he is going to sell quite a bit of it. He thinks that he will give a break to a couple of friends so he calls them up and says, "I am going to do this and I suggest that you unload before we start unloading."

That may be a breach of ethical relationship within the bar association, but this does not invoke the jurisdiction of the SEC?

Mr. COHEN. Yes, I think it would. It would be a violation of our antifraud provisions under the Exchange Acts.

Mr. WYMAN. Where is the fraud?

Mr. COHEN. Because what happens there is that some individuals, who have been privy to inside information, have used it as against other people who were not so privy. I say that I think it would be. The cases in this area are developing and the courts in fact have moved their interpretation of these antifraud provisions even beyond that which the Commission has recommended because of situations of the kind that you have mentioned for which the courts feel obviously some remedy must be found. They seize upon, and we have encouraged them in some cases, the antifraud provisions of the statutes and fashioned remedies.

Mr. WYMAN. Do you have any information that any of the very large firms that hold substantial holdings in the same or identical companies have been getting together to decide what they are going to do?

Mr. COHEN. I have no information. This has been suggested to me by various people. I have seen it referred to in the newspapers. It appeared in the New York Times one day. Mr. Pollack, who is my chief policeman and regulator in this area, has been banged on the head by me at least a dozen times to pursue this. They really have not come up with any evidence that this goes on to any substantial degree.

Mr. JONAS. Will you yield off the record?

Mr. WYMAN. Yes.

(Discussion off the record.)

Mr. EVINS. On the record.

SPEECH AT FIRST INSTITUTIONAL INVESTORS CONFERENCE

Mr. EVINS. Tell us about your speech, Mr. Chairman.

Mr. COHEN. This is public.

I made a speech a couple of weeks ago at what was described as the First Institutional Investors Conference. In this speech I spoke to the very point you raised, that these institutional investors, these professionals not only have responsibilities to their own constituencies, that is, their own cestin que trusts—the people who have interests in the fund—but since they share with all the people the public facilities of the securities markets, that perhaps, they ought to reexamine their activities, because there are many small people who for one reason or another were in the market directly and who are in danger of being trampled by the actions of some of the big institutions.

The trampling could come about wholly innocently when a big institution wishes to buy or sell, but it could have the same effect as one arising from a rumor or a suggestion or whatever it may be, which may put somebody in the middle and cause him to be pinched between the tremendous forces of institutional investors.

The very nature of the securities market is changing for the reasons that you gentlemen have put your fingers on. More and more of the trading is accounted for by the institutions. More and more of the floating supply of stock is being contracted. The amount of merchandise being manufactured, if I can use that expression, that is, new

stock, does not equal the demand. So that the possibility of being hurt is tremendous.

For example, a few years ago, when this was really coming into its first flowering, managements in many companies were very proud of the fact that institutional investors bought the stock of their companies. This was a badge of success, and indeed it was. The manager was also proud because it raised the price of the stock and that made him a hero with the stockholders. He was also happy because he had some options and they became more valuable.

When, for some reason or another, the professional managers decided they did not like that industry or company and moved out and prices went down, some of these people were much concerned and they have been around to see us. Some have suggested very strongly that there should be some control over the activities of these institutional investors. I think if we move into that area, we are moving in an entirely new area. Frankly, that scares me.

I think we need to know a great deal more about the habits of the professional investor, whether he is a banker, whether he is an insurance man, mutual fund man, or administrator of a pension fund. That is why I hope to be back to see you gentlemen pretty soon so that you will let us get started with this study of what is going on.

I am not sure we will have answers to all of these questions.

INSIDE INFORMATION

Mr. WYMAN. It is reasonably prevalent, is it not, that insiders and friends, people in the position to which you have just made reference, quite frequently benefit from the decisions made to purchase or sell large blocks of stock?

Mr. COHEN. Mr. Wyman, I do not have any evidence of that. If I had evidence of that, we would move.

Mr. WYMAN. I am not trying to lead you. You have said it does happen?

Mr. COHEN. I am sure it does.

Mr. WYMAN. Does it happen frequently?

Mr. COHEN. Well, if you look at it in terms of the whole scale of things, it does not happen that frequently. It happens too frequently in terms of the fact that people affected by it are hurt.

Mr. JONAS. You have the same thing in some strange way where a few people find out *X* company is going to locate in a certain place and before you know it they have bought up all the land.

Mr. COHEN. Exactly.

Mr. JONAS. A new highway is going through a certain section and somebody with a little way of finding out things gets the profit.

Mr. EVINS. The profit motive and incentive in the free enterprise system is ingenious.

Mr. WYMAN. Mr. Chairman, one more question.

Mr. EVINS. Yes.

OVER-THE-COUNTER MARKET

Mr. WYMAN. The over-the-counter market, is that subject to your jurisdiction?

Mr. COHEN. Yes, sir; but in a different way from the exchange market.

Mr. WYMAN. You really do not know too much about each of these little companies, do you?

Mr. COHEN. Let me tell you what we are doing and why. Also, why I am asking for two more people for our computer program. We have our computer programed now with respect to the more active securities traded in the over-the-counter market in a manner similar to the way the stock exchanges have their computers programed. Any unusual price change, any unusual drifting to a particular security or the number of brokers and dealers who are quoting it, anything of that kind immediately is kicked out of the machine. Our boys will try promptly to find out whether there is a good reason for it—has the company announced it has just discovered a mine? Does it have a new patent?

If there does not seem to be a good reason, we probe further. This is how we pick up a great many of these situations.

Mr. WYMAN. Would it be possible for one of us, or myself to have somebody assigned to us to see how these things operate?

Mr. COHEN. Absolutely. Tell me when you want to do it. You will have a red carpet.

Mr. WYMAN. I do not care about the red carpet. I would like to see how this operates.

Mr. COHEN. I would like to have you come and see how our computer, here in town, operates, and that will give you a little insight when you go to New York. Let me know when you want to do it.

CONVICTIONS BY THE SEC

Mr. EVINS. Mr. Chairman, you have suspended, fined, or brought about convictions of a number of bad operators over the years. What do you do with repeaters? A judge is sometimes lenient with a first offender. If he is a repeater, the sentence is more severe. What does the Commission do with respect to repeat offenders?

Mr. COHEN. You mean where we have jurisdiction?

Mr. EVINS. Yes.

Mr. COHEN. We impose a sanction. We put them out of business either for all time, but I think it fair to say, being entirely candid, we do have soft hearts. On occasion, we do allow a fellow back into the business. There have been a few instances, thank goodness relatively few, where we have regretted it. When a man is a repeater, we do take that into account when determining what the appropriate sanction should be.

AMERICAN STOCK EXCHANGE

Mr. EVINS. What about the American Exchange; you talked about their bad operations?

Mr. COHEN. Yes. I am sure that you have noticed in the newspapers——

Mr. EVINS. Manipulation cases?

Mr. COHEN. Yes, sir. There have been a number of indictments. I think we have several. We have four now and more to come.

I might say the management of that stock exchange has been concerned about this and has improved its own stock surveillance program

tremendously. In addition, our people are in constant communication with them. There is an exchange of information.

You mentioned the limitation of trading or suspension of trading. There have been a number of situations recently where securities trading on the American Stock Exchange was halted and they brought the information to our attention. We suspended trading in the over-the-counter market until the situation could be clarified. They are improving the situation. I think it is probably fair to say that no matter how many policemen you have, you will never eradicate it entirely.

NATURE OF MANIPULATIONS

Mr. EVINS. What is the nature of the manipulation and how did your investigator discover this?

Mr. COHEN. There are a number of them.

Mahlon, do you want to discuss them?

Mr. EVINS. Is this the man who caught the malpractice operator in the market?

Mr. FRANKHAUSER. I personally did not.

Mr. EVINS. You take some credit.

Mr. FRANKHAUSER. We like to take some credit.

Mr. COHEN. May I explain about Mahlon. Mahlon used to be with us here in Washington and for a long time was in charge of our criminal reference work. I think he can answer your question very well.

Mr. EVINS. Tell us about the American Exchange manipulation cases. How was it discovered? What were the practices?

Mr. FRANKHAUSER. All four cases involved, from a policeman's point of view, a very difficult technique to detect. The best way to describe it, I guess, is to say that people either with the company or people who acquire a position in the company's stock let a contract, in the parlance of organized crime, on that stock and then make cash payoffs to registered representatives in brokerage houses to push the stock.

This is somewhat different from the old type of manipulation.

Mr. EVINS. They made contracts to push a particular stock?

Mr. FRANKHAUSER. That is right. In one case, it was the president of the company. In the three other cases, groups of people took a position at low price in this particular stock and thereafter made the contract with various registered representatives and broker-dealer houses to push the price up and then dumped the position they took in the stock. That is basically what those four cases are about. There are a number of others we are working on now.

Mr. EVINS. How long has this investigation been underway?

Mr. FRANKHAUSER. The investigation has been underway approximately 2 years with the grand jury. There are a number of other cases still underway.

Mr. EVINS. Has the practice been arrested in the meantime?

Mr. FRANKHAUSER. There have been some more recent situations

which we are looking into. I cannot say it has been arrested. I believe that the brokerage community itself is much more aware of the problem and we have been in communication with compliance directors of a large number of brokers.

INJUNCTION ACTIONS

Mr. EVINS. When do you get to the injunctive process?

Mr. FRANKHAUSER. We are attempting to move much more quickly these days and we are. More recently, in the last 6 months, we filed 10 injunctions. In those we stopped the operation cold, and I think saved the investing public about $73 million.

Mr. EVINS. Very good.

Does the SEC file these or does the Department of Justice?

Mr. FRANKHAUSER. The SEC files the injunction.

CRIMINAL CASES

Mr. EVINS. Criminal cases are referred to the Department of Justice, but you go ahead with the injunctive proceedings?

Mr. FRANKHAUSER. That is right. In criminal cases we take a very active role in the prosecution. I have 20 percent of my investigative staff tied up at the courthouse in the southern district and eastern district of New York on a constant basis in the criminal prosecutions.

Mr. COHEN. If I may interpolate, Mr. Chairman, this has always been a struggle.

As to the Department of Justice, every case we send them requires that we must send a couple of men. We are never reimbursed; but it is something we must do.

Mr. EVINS. It is a very difficult investigation and it takes astute men in your investigation. I commend you for your good work.

Mr. FRANKHAUSER. Thank you, Mr. Chairman.

Mr. JONAS. The average district attorney would have to go to law school to get familiar with this law?

Mr. COHEN. Mr. Jonas, you are quite right. We have educated quite a few of them now. A few years ago it was difficult to get a U.S. attorney to take one of our cases.

A U.S. attorney could do 12 narcotics cases before he could deal with one of our cases. Suddenly, the U.S. attorneys began to realize there was a great deal of value, personal value, if you will, in these cases. Now all are reaching for them.

LAWS ADMINISTERED BY THE COMMISSION

Mr. EVINS. The Commission has a number of laws to administer: Securities Act, Securities Exchange Act, Public Utility Holding Company Act, Trust Indenture Act, Investment Company Act, Investment Advisers Act, and Chapter X of the National Bankruptcy Act.

Tell us what those are.

INVESTMENT COMPANY ACT

Mr. COHEN. In the Investment Company Act, Congress decided disclosure was not adequate to meet the problems of investment companies and the conflicts of interest that arise because of the structure of that industry. The Investment Company Act is a regulatory one in the conventional sense but it is designed to deal with the grosser types of abuse which had been uncovered in the investigations made prior to that time.

INVESTMENT ADVISERS ACT

Mr. COHEN. The Investment Advisers Act deals with a related problem. It is concerned essentially with those people who are registered with the Commission and render advice to members of the public for a fee.

Mr. EVINS. These are people registered with the Commission and give advice for a fee. A lot of trade journals often say it is a good time to buy, or we recommend that you don't purchase at this time.

Mr. COHEN. Most of them are registered with us and we are struggling with these problems.

Mr. EVINS. They frequently do not say anything definite.

Mr. COHEN. Some of them say definite things that require us to move in. We have some cases pending. It is a very troublesome area. The Commission is concerned with improving the rules in this area.

SUPREME COURT DECISION

Mr. OWENS. Just today the Supreme Court denied certiorari in a case in which we denied registration to an investment firm.

Mr. COHEN. Going back to Mr. Wyman's question, we went all the way to the Supreme Court in a situation of that kind. The investment adviser in that case knew he was going to send out an advisory opinion to buy a particular stock. He bought it first and, when his bulletin had the desired effect, he sold before his clients could get out. We could not persuade any of the courts until we got to the Supreme Court that this was a fraud because he did not tell his clients about it. That goes to the point you made and I think partly to the point made by Mr. Jonas.

CHAPTER X, NATIONAL BANKRUPTCY ACT

Mr. EVINS. Chapter X of the National Bankruptcy Act. Do you have much activity in this field now?

Mr. COHEN. Yes. I think we have more than we anticipated in these days of affluence. We have had some growing out of fraud cases. There is a case in Texas that is taking a good deal of our time.

Mr. EVINS. The general objective of all these statutes is to protect the public interest. You keep that before your mind—protect the public interest and prevent fraud and manipulation.

JUSTIFICATION MATERIAL

Place in the record the statutory pages 1 through 4 and summary of the position request and budget which is on page 5.

(The pages follow:)

JUSTIFICATION FOR THE 1969 BUDGET ESTIMATE

STATUTORY AUTHORITY

The Securities and Exchange Commission is an independent, quasijudicial agency. It administers: (1) Securities Act of 1933; (2) Securities Exchange Act of 1934; (3) Public Utility Holding Company Act of 1935; (4) Trust Indenture Act of 1939; (5) Investment Company Act of 1940; and (6) the Investment Advisers Act of 1940. By terms of chapter X of the National Bankruptcy Act, as amended, the Commission also serves as adviser to Federal courts in corporate reorganization proceedings.

PURPOSE

The general objective of the statutes administered by the Commission is to protect the interests of the public and investors by preventing fraud, deceit, and manipulation in the sale and trading of securities, by enforcing statutes requiring high standards of conduct in financial reporting and other activities of issuers of securities and brokers and dealers, by regulating public utility holding company systems and investment companies, and by rendering assistance to courts in corporate reorganizations.

DUTIES

The primary duties of the Commission under the above statutes are:

1. *Securities Act of 1933.*—Administration of the law which, with respect to securities sold in interstate commerce or by use of the mails, has two basic objectives: (*a*) to provide investors with financial and other information concerning new issues of securities or outstanding issues owned by controlling persons offered for public sale; and (*b*) to prohibit misrepresentation, deceit, and other fraudulent acts and practices in the sale of securities generally.

2. *Securities Exchange Act of 1934.*—This act requires the filing of registration applications and annual and other reports with national securities exchanges and the Commission by companies whose securities are listed on the exchanges. Public Law 88-467 (Securities Acts Amendments of 1964) enacted August 20, 1964, extends similar requirements to companies whose securities are traded in the over-the-counter market. Effective July 1, 1964, companies having $1 million in assets and a class of equity securities held of record by 750 or more persons are required to register with the Commission and assume the obligations of companies listed on the exchanges. Effective July 1, 1966, the stockholder requirement was reduced to the 500 shareholder level. These filings must contain financial and other data prescribed by the Commission for the information of the investing public.

The act also requires registration with the Commission of national securities exchanges, brokers, and dealers engaged in an over-the-counter securities business, and national associations of such dealers. Their activities and practices are subject to regulation and disciplinary action by the Commission to prevent fraud in the purchase or sale of securities, to prevent manipulative practices in the over-the-counter and exchange markets, and to insure maintenance of just and equitable principles of trade for the protection of investors and the public.

The act also subjects to Commission regulation short sales, stabilizing, floor trading, the activities of specialists and odd-lot dealers, and such matters as excessive trading by exchange members. It further provides for control of the use of credit to finance the purchase of securities listed and registered on ex-

changes through establishment of minimum margin requirements by the Board of Governors of the Federal Reserve System.

In addition to certain technical and clarifying amendments, certain provisions of Public Law 88–467 expand the function of the Commission as follows: (1) broadens Commission disciplinary controls over brokers, dealers, and their employees; (2) permits the assessment of fees by the Commission for expenses incurred for certain regulation of registered brokers and dealers who are not members of a national securities association; and (3) expands the Commission's supervisory responsibilities over self-regulatory associations of brokers and dealers. The controls provided have their primary impact upon those who deal in over-the-counter securities.

3. *Public Utility Holding Company Act of 1935.*—This act provides three areas for regulation of holding companies controlling electric and gas utilities: (1) physical integration of public utility and related properties of holding company systems, and simplification of financial and corporate structures of those systems; (2) regulation of financing operations, acquisitions, and dispositions of securities and properties, accounting practices and servicing arrangements of holding company systems; and (3) exemptions of certain companies from provisions of the act and regulation of the rights of persons affiliated with a public utility to acquire securities of other public utilities.

4. *Trust Indenture Act of 1939.*—The rights and interests of purchasers of debt securities issued under mortgage indentures and sold publicly are safeguarded through provisions of this act requiring elimination of exculpatory clauses from and inclusion of protective provisions in indentures. The act also requires that the indenture trustee, who as a representative of the debt holders has the duty to see that the covenants in the indenture are adhered to, shall be "independent" and free of any interests which might conflict with the proper exercise of his duties.

5. *Investment Company Act of 1940.*—This act provides for the registration with the Commission of investment companies, and subjects their activities to regulation in accordance with prescribed standards in the interest of protecting investors.

6. *Investment Advisers Act of 1940.*—Persons who, for compensation, engage in the business of advising others with respect to their security transactions must register with the Commission.

In addition to other provisions, amendments to this act by the 86th Congress expand the authority of the Commission as follows: (1) empowers the Commission to require investment advisers to keep books and records in accordance with rules to be prescribed by the Commission; (2) provides for regular and periodic inspections of registered investment advisers; (3) expands the power for denial or revocation of registration of investment advisers; and (4) empowers the Commission to issue rules and regulations, which would prohibit fraudulent, deceptive, and manipulative practices by investment advisers.

7. *National Bankruptcy Act—Chapter X.*—To aid the Federal courts in the administration of the affairs of debtor corporations being reorganized under chapter X, the Commission participates actively as a party to the proceedings in those cases in which a substantial public investor interest is involved, and files advisory reports on reorganization plans in appropriate cases. The Com-

mission also may appear in chapter XI cases to challenge whether the relief sought may properly be granted under the provisions of that chapter.

The Commission is assisted by a staff of professional employees, including lawyers, accountants, engineers, security analysts, and examiners; and by administrative and clerical employees. The staff is organized into separate divisions and offices, including nine regional offices, each under the charge of a division director or office head, and each of which is responsible for the performance of certain functions in the administration of the laws assigned to the Commission.

The table on page 5 shows the additional funds and positions requested for fiscal 1969 over 1968. The table on page 6 shows, by divisions and offices the actual obligations and positions for 1967, estimated obligations and positions for 1968 and 1969, and changes proposed in 1969. Similar data are furnished for all other items of "Other expenses."

SUMMARY OF ADDITIONAL FUNDS—REQUESTED FOR FISCAL 1969

Fiscal 1968	Positions	Funds
Appropriation	1,403	$17,350,000
Supplemental appropriation for pay increase and related costs		380,000
Subtotal		17,730,000
Adjustments, fiscal 1969		
A. Personal services:		
Cost of additional positions	25	206,000
Cost of mandatory within grade increases		179,000
Cost of pay increase in 1969 (for 12 months) over 1968 (for 9 months)		165,000
Subtotal, personal services		550,000
B. Other expenses:		
Reductions:		
Rental of the computer and auxiliary equipment		(71,000)
Purchase of the computer and auxiliary equipment		(425,000)
Increases:		
Personnel benefits		41,900
Benefits to former employees		7,150
Travel		15,000
Communications and penalty mail		30,900
Equipment		18,000
Other expenses		6,050
Subtotal, other expenses		(377,000)
Total requested appropriation for fiscal 1969	1,428	17,903,000

ADDITIONAL POSITIONS

Mr. EVINS. It has been pointed out you want $550,000 for 25 more jobs and pay increases. Look at the breakdown in this chart. This gives you an excellent summary. Place in the record page 6.

(The page follows:)

SECURITIES AND EXCHANGE COMMISSION

ACTUAL COSTS FOR 1967, PROGRAM FOR 1968, CHANGES FOR 1969, AND ESTIMATE FOR 1969

Division office	Actual, 1967		Program, 1968		Changes for 1969			Estimate for 1969	
	Positions	Aggregate of annual salaries	Positions	Aggregate of annual salaries	Positions	Aggregate of annual salaries	Mandatory within-grade increases	Positions	Aggregate of annual salaries
Executive offices	26	$369,371	28	$431,136			$6,774	28	$437,910
Office of Policy Research	48	440,099	46	461,769	9	$79,111	10,976	55	551,856
Office of the Secretary	9	83,360	9	89,892			452	9	90,344
Office of Hearing Examiners	12	205,722	12	221,475			3,411	12	224,886
Office of Opinions and Review	14	184,936	12	172,418			1,862	12	174,280
Office of General Counsel	33	374,066	33	396,182			9,964	33	406,146
Office of Chief Accountant	11	155,003	11	148,401			2,005	11	150,406
Division of Corporation Finance:									
Office of the Director	9	119,209	8	118,852			1,224	8	120,076
Branches of Corporate Analysis and Examination (15)	186	1,951,346	177	2,044,169			50,275	177	2,094,444
Branch of Administrative Proceedings and Investigations	12	131,430	12	138,701			4,057	12	142,758
Branch of Filings and Reports	33	200,779	32	211,123			4,856	32	215,979
Office of Chief Accountant	9	130,457	8	120,454			2,582	8	123,036
Office of Chief Counsel	11	119,695	11	127,221			3,239	11	130,460
Branch of Small Issues	10	89,852	10	96,307			1,592	10	97,899
Office of Engineering	10	142,788	9	129,006			3,842	9	132,848
Subtotal	280	2,885,556	267	2,985,833			71,667	267	3,057,500
Division of Trading and Markets:									
Office of the Director	10	129,030	10	137,800			1,600	10	139,400
Office of Chief Counsel	9	111,978	9	120,077			713	9	120,790
Offices of Enforcement, Criminal Reference and Special Proceedings	61	638,865	61	688,119	1	8,054	19,480	62	715,653
Branch of Registration and Reports	36	241,569	36	256,148	4	22,260	4,624	40	283,032
Office of Regulation	48	412,653	52	491,326	4	38,628	12,678	56	542,632
Subtotal	164	1,534,095	168	1,693,470	9	68,942	39,095	177	1,801,507
Division of Corporate Regulation:									
Office of the Director	10	133,406	10	141,041			2,943	10	143,984
Branches of Investment Company Regulation (4) and Branch of Inspection	70	730,871	71	827,262	3	20,787	21,507	74	869,556
Branches of Public Utility Regulation and Reorganization	17	198,374	18	226,817			5,704	18	232,521
Office of Chief Counsel	7	70,909	8	82,086	2	19,314	2,615	10	104,015
Office of Financial Data	4	49,950	4	53,383			385	4	53,768

Subtotal	108	1,183,510	111	1,330,589	5	40,101	33,154	116	1,403,844
Office of Comptroller	17	151,134	18	157,976			3,382	18	161,358
Office of Personnel	16	152,994	16	160,339			4,363	16	164,702
Office of Records and Service	99	628,493	102	692,864			10,504	102	703,368
Office of Data Processing	29	209,633	33	257,452	2	18,195	7,174	35	282,821
Subtotal, departmental	866	8,557,972	866	9,199,796	25	206,349	204,783	891	9,610,928
Regional: offices:									
New York	182	1,760,514	180	1,895,916			44,862	180	1,940,778
Boston	25	269,999	25	293,408			7,250	25	300,658
Atlanta	30	345,956	29	355,886			6,161	29	362,047
Chicago	86	884,613	84	924,225			20,604	84	944,829
Fort Worth	32	337,673	34	370,833			10,169	34	381,002
Denver	48	512,953	48	552,339			11,919	48	564,258
San Francisco	54	602,865	54	645,131			13,296	54	658,427
Seattle	37	410,823	37	440,856			7,791	37	448,647
Washington, D.C	45	484,315	46	527,063			12,933	46	539,996
Subtotal, field	539	5,609,711	537	6,005,657			134,985	537	6,140,642
Personal services	1,405	14,167,683	1,403	15,205,453	25	206,349	339,768	1,428	15,751,570
Less: Net savings	80	681,478	43	720,453		349	160,768	43	881,570
Net personal services	1,325	13,486,205	1,360	14,485,000	25	206,000	179,000	1,385	14,870,000
Adjustment for pay increase						165,000			165,000
Reimbursements to other agencies		750		2,000					2,000
Positions other than permanent	35	156,406	20	83,600				20	83,600
Overtime and holiday pay		49,105		34,400					34,400
Cost of personal services	1,360	13,692,466	1,380	14,605,000	25	371,000	179,000	1,405	15,155,000
Other expenses:									
Personnel benefits		1,031,917		1,066,200		41,900			1,108,100
Benefits to former employees		10,921		4,350		7,150			11,500
Travel and transportation of persons		474,105		492,300		15,000			507,300
Transportation of things		9,309		10,600					10,600
Communications and rentals		[1] 1,485,316		594,100		(40,100)			554,000
Printing and reproduction		84,752		65,950		50			66,000
Other services		332,746		319,000		6,000			325,000
Supplies and materials		171,843		133,800					133,800
Equipment		140,750		438,700		(407,000)			31,700
Subtotal, other expenses		3,741,659		3,125,000		(377,000)			2,748,000
Total expenses		17,434,125		17,730,000		(6,000)	179,000		17,903,000
Actual savings		115,875							
Total appropriation or estimate		17,550,000		[2] 17,730,000		173,000			17,903,000

[1] Includes $829,461 transferred to the GSA for rental of space.

[2] Includes a supplemental request for $380,000 for pay and other costs.

Mr. EVINS. In the executive offices of the Commission, no increase.

Office of Policy Research goes up from 46 to 55.

There is an increase of nine there.

Mr. COHEN. Right.

Mr. EVINS. Then there is a breakdown here for the Division of Trading and Markets. That is a total increase of nine.

Mr. JONAS. I hope you take notice of the fact that out of a zillion figures here there are only two minuses on this whole page.

Mr. EVINS. The third column shows the change. The result is an increase of 25 jobs. Someplace, Mr. Chairman, you may have a little shortage of personnel and in others you may have a surplus. Do you transfer your personnel and assign them to projects of high priority?

Mr. COHEN. We do when we can. I can assure you there is no fat around any more.

OFFICE OF POLICY RESEARCH

Mr. EVINS. Your Office of Policy Research assists the Commission by analyzing legal, economic, and industrial developments affecting the securities markets. They also prepare statistical data, and compile and publish reports.

Place in the record pages 9–11.

(The pages follow:)

FUNCTIONAL STATEMENT

The principal functions of this Office are threefold: (1) to assist the Commission in establishing regulatory policy by analyzing legal, economic, and industrial developments affecting the securities markets and by recommending to the Commission the institution or modification of programs commensurate with such developments; (2) to prepare statistical data and analyses related to the capital markets for Commission use as well as for general economic analysis; and (3) to compile and publish data furnished to the general public as part of the overall Government statistical program. The areas of research covered by these three categories are closely interrelated; information which the Commission compiles under its first two functions are also an integral part of the general Government statistical program, while the third area is also of use to the Commission in providing important financial information which serves as background for understanding of current developments in the capital markets.

JUSTIFICATION

Fiscal year	Personal services	
	Cost	Positions
1968	$426,000	46
Increase	90,100	9
1969	516,100	55

The increase of $90,100 in 1969 over 1968 represents: (a) $79,000 for nine additional positions (two economists, three statisticians and four statistical clerks) for the purpose of extending in scope and detail economic and statistical data pertaining to the capital markets; and (b) the cost ($11,100) for mandatory pay increases.

The projects for which the additional personnel are requested for 1969 involve research affecting both direct Commission responsibilities and the more general Government statistical programs. Specifically, the additional personnel are needed in the following areas:

1. *Improved information on new issues financing.*—The volume of securities financing in recent years has been increasing dramatically and its composition is changing with the changing capital needs and market conditions. Some current

gaps in our information—including inadequate coverage of private placements, small issues and retirements of securities—need to be filled. To accomplish this task will require two additional persons.

2. *Improved information on institutional activity in the securities markets.*—To improve our current knowledge of institutional activity, this Office has developed a plan to expand and improve the Commission's program pertaining to institutional participation in the securities markets. At the present time our coverage of institutions is confined to mutual funds, uninsured private pension funds, and insurance companies.

The information currently available for the groups other than mutual funds is on an aggregate basis contained in quarterly reports. We expect to extend this information to other institutional groups, and to obtain monthly rather than quarterly data on transactions in the various types of securities such as stocks and bonds. For this purpose, four additional positions are required for fiscal 1969. Despite the additional personnel requested, we will not be able to undertake the total spectrum of this project. Such a task would require substantial manpower to undertake a comprehensive study of the growth and activities of all types of institutional investors. Serious policy decisions will be required to avoid damage to the investor and public interests.

3. *Improved financial information on business firms.*—The Commission is designated by the Bureau of the Budget as the agency best suited to collect certain financial information from business firms. The specific project for which improved and more timely data are required is the determination of working capital estimates of corporations. Specifically, more detailed and more timely information is needed pertaining to changes in the financial position of these corporations. To accomplish these requirements, an additional three persons are required.

Office of the Secretary

Mr. Evins. Office of the Secretary. He keeps the seal and sends out the documents.

Place in the record pages 13 and 14.

(The pages follow:)

FUNCTIONAL STATEMENT

This Office is responsible for attendance at the daily meetings of the Commission and for the preparation and maintenance of the official minute record of its actions. All official decisions, orders and rules adopted by the Commission, as well as all its other administrative actions, are recorded by and issued through this Office. The Secretary is custodian of the Commission's seal, with power to certify and authenticate documents reflecting official action of the Commission, and performs other and related duties.

In addition, the Secretary is the chief information officer of the Commission to whom general inquiries of the public and press representatives are directed. All public announcements of Commission actions also are prepared by and/or released through this Office. An important phase of the latter function is the preparation (both for the press and for public distribution through the Government Printing Office) of a daily résumé (SEC News Digest) pertaining to (1) all decisions, orders, and rules adopted by the Commission, and (2) all financing and related proposals filed with the Commission. Moreover, the Secretary serves as the Commission's congressional liaison officer on nonlegislative matters.

The Secretary also is responsible for the scheduling of hearings in administrative proceedings, the assignment of hearing examiners, and other related actions under the Commission's rules of practice.

JUSTIFICATION

Fiscal year	Personal services	
	Cost	Positions
1968	$88,000	9
Increase	1,000	
1969	89,000	9

The increase of $1,000 in 1969 over 1968 represents the cost of mandatory pay increases.

Office of Hearing Examiners

Mr. Evins. How many hearing examiners do you have?

Mr. Cohen. We have eight hearing examiners and four clerical personnel.

Mr. Evins. There is no change in positions?

Mr. Cohen. No change.

Mr. Evins. You have 12 positions.

Mr. Cohen. On page 17 there is a 1967 actual figure, estimated 1968 and 1969.

Mr. Evins. Place in the record pages 16 and 17.

(The pages follow:)

FUNCTIONAL STATEMENT

Serving in a quasi-judicial capacity, the hearing examiners preside over public and private hearings ordered by the Commission under the various statutes it administers, which are held throughout the United States. In the conduct of such proceedings, they subpena witnesses and documents; administer oaths; take testimony; rule on the admissibility of evidence, offers of proof, and other disputed matters; rule upon motions and procedural requests; and take other and related actions incident to the proper development of the evidentiary record while protecting the rights of all parties to the action.

At the conclusion of a hearing and after the submission of proposed findings and briefs by the parties, the hearing examiner prepares an initial decision, as may be required, based upon the evidence in the record, the arguments and contentions made, and the application of law and regulations to the facts. Such decisions are subject to appeal to the Commission but, absent appeal, become the final decisions of the Commission.

JUSTIFICATION

Fiscal year	Personal services	
	Cost	Positions
1968	$203,000	12
Increase	5,500	
1969	208,500	12

The increase of $5,500 in 1969 over 1968 represents the cost of mandatory pay increases.

The actual workload for fiscal 1967 and estimated for 1968 and 1969 is shown below:

	1967 actual	1968 estimate	1969 estimate
Administrative proceedings pending before examiners, beginning of year	47	38	30
Authorized, during year	67	75	80
Subtotal	114	113	110
Disposed of by Office of Hearing Examiners	76	83	85
Pending, end of year	38	30	25

Office of Opinions and Review

Mr. Evins. Page 19 shows your Office of Opinions and Review. The Director of that Office has the authority, by delegation of the Commis-

sion, to issue certain categories of interlocutory orders and, in consent and default cases, final orders; and to grant petitions for review of initial decisions of a hearing officer. Also, he is responsible for preparing the annual report of the Commission to the Congress.

Mr. COHEN. No increase there.

OFFICE OF THE GENERAL COUNSEL

Mr. EVINS. Next is the Office of the General Counsel. On page 23, you state that during 1967, the Commission filed 68 suits for injunction and 20 miscellaneous actions in the district courts. In addition, in 1967 you handled 21 appeals. There were 32 friends of the court proceedings, 10 appeals in reorganization, and 12 appeals in injunction cases.

Mr. COHEN. I think there is one aspect of that Office I might mention. That Office is the Commission's principal legal adviser and is also an adviser to all the divisions.

Mr. EVINS. In addition to the court cases, it is the chief legal adviser to the Commission. The General Counsel referred to the Department of Justice 44 criminal reference reports. The scope and complexity of these matters is significantly increasing.

What are the types of cases?

Mr. LOOMIS. There are all types of cases.

Mr. EVINS. Manipulation and fraud cases; are you pretty familiar with those?

Mr. LOOMIS. Yes, sir.

Mr. COHEN. That he is.

Mr. EVINS. You speak about the investigations of the Office of General Counsel on page 24. Does this Office conduct its own investigations?

Mr. LOOMIS. In this particular type of case which involves disqualification of attorneys, accountants, other people, we do. That is the only type we basically investigate.

Mr. EVINS. Thirty-three lawyers there.

Mr. LOOMIS. No.

Mr. COHEN. Mr. Evins, Mr. Loomis is a little unhappy. Actually he has only 19 professional people; the rest are secretarial.

OFFICE OF THE CHIEF ACCOUNTANT

Mr. EVINS. You have 11 in the Office of the Chief Accountant. His functions include developing sound accounting, auditing, and reporting practices. He also recommends and supervises proceedings to determine whether accountants should be denied the privilege of practicing before the Commission. The three main divisions are the Divisions of Corporation Finance, Trading and Markets, and Corporate Regulations. We will look at these three divisions.

DIVISION OF CORPORATION FINANCE

Corporation Finance assists the Commission in the discharge of those responsibilities relating to (1) requiring full and fair disclosure

of information essential to purchasers of securities offered to the public by issuers, underwriters, and others and the prevention of fraud in such offerings; (2) establishing and requiring adherence to standards of adequacy and fairness in reporting information of importance to investors, such as financial data, changes in business and acquisitions and dispositions of assets by companies whose securities are traded on national exchanges and in the over-the-counter market; (3) establishing, in collaboration with the Office of the Chief Accountant and in cooperation with the accounting profession, sound and uniform standards of auditing and accounting procedures and practices; (4) establishing and requiring, with respect to securities traded on national securities exchanges and in the over-the-counter market, adherence to standards of full and fair disclosure as well as fair dealing in the solicitation of proxies of security holders for the election of directors or the accomplishment of other corporate actions, such as mergers, consolidations, reorganizations, recapitalizations, and acquisitions or dispositions of assets; and (5) the enforcement of statutory provisions requiring that indentures governing debt securities contain certain provisions for the protection of public security holders, including the requirements of independence and a high standard of conduct on the part of indenture trustees.

PROXIES

Mr. COHEN. Every company that has securities listed on the stock exchange now by the rules of most exchanges is compelled to solicit proxies.

Under the 1964 amendments, the statute provides that with respect to those companies as well as companies that are not trading on the stock exchange but are subject to reporting to the Commission, they either file proxy statements if they solicit proxies or a statement in lieu of a proxy statement which provides essentially the same information.

In most cases those proxy statements relate to the election of directors, give information about the management, compensation, transactions, things of that sort. If there are proposals made for amendment of the charter or other proposals submitted to shareholders, you will find that in the proxy statement we had about 35 proxy contests in fiscal 1967. These contests often involve many filings by each side, and our staff has to work almost around the clock.

INTERPRETATIONS

Mr. EVINS. In line with Mr. Wyman's question, you require high standards of conduct in all these operations; there is provision for rendering interpretations to issuers and investors. Do you provide them with a free opinion?

Mr. COHEN. We do.

Mr. EVINS. I imagine they would be willing to pay a little fee.

Mr. COHEN. We have given thought to the problem from time to time. We provide a tremendous service here in Washington and in our regional offices. The question has been raised from time to time whether

the Commission should continue to do that, particularly in our straitened circumstances. I think that, by and large, the Commission has decided to continue the service which is for the benefit of issuers, for the benefit of counsel and accountants of the issuers as well as for investors.

Mr. EVINS. You show your workload on page 32. You start out with registration statements for financing other than investment companies. At the beginning of fiscal year 1967, you had 339 pending, up to 379 in 1968, and in 1969 you estimate 480. Then filed during each year, 1534, 2,000, and 2,100. Disposed of each year, 1,494, 1,899, and 1,990. Your estimate is that 590 registration statements for financing from companies other than investment companies will be pending at the close of 1969.

The same pattern follows in registration statements for securities traded on the exchange. You have 51 and 74 and estimate 100. Filed during the year, 395, 400, and 400. Disposed of, 372, 374, and 400.

Mr. COHEN. Mr. Chairman, if I may interrupt. I had adverted to but forgot to give you the exact figure. In this registration area, other than investment companies, from the beginning of the fiscal year to February 29, 1,369 were filed as compared to 730 for the comparable period last year. Almost 100-percent increase.

This 2,000 figure may be on the low side, too.

Mr. EVINS. What is the date of the table that you are testifying to now as against the time you made the budget?

Mr. COHEN. This is dated March 1. My statement was prepared a week or two ago.

WORKLOAD

Mr. EVINS. We will place pages 31 through 33 in the record.

(The pages follow:)

GENERAL STATEMENT WITH RESPECT TO THE DIVISION'S WORKLOAD

For the 6 months ending December 31, 1967, 1,050 regisrtation statements for financing were filed with the Commission as compared with 571 statements filed for the same period in 1966—an 84-percent increase. In order to process the additional workload during the current fiscal year and next year, it will be necessary to further modify our normal examination procedures of the various filings and reports. This limited examinaton process will be applied in those areas where the Commission believes the risk to the public is a reasonable one. Despite this limited examination, the review of a number of annual and periodic reports may be deferred because of manpower requirements. This approach cannot continue indefinitely without seriously impairing the program of full disclosure.

The total workload of the Division is subdivided into three major areas which is performed by the following branches of the Division of Corporation Finance. The Commission has no control over the volume of registration statements filed for financing, applications for registration on exchanges and in the over-the-counter market, preliminary proxy statements and annual and periodic reports submitted by corporations and individuals.

Activity	*Organization*
1. Disclosure of investment information (registration and proxy statements and reports).	Branches of Corporate Analysis and Examination.
2. Administrative proceedings and investigations.	Branch of Administrative proceedings and Investigation.
3. Administration of regulations A and F.	Branch of Small Issues.

I. DISCLOSURE OF INVESTMENT INFORMATION

	1967 actual	1968 estimate	1969 estimate
A. Registration statements for financing from companies other than investment companies:			
Pending at beginning of year	339	379	480
Filed during the year	1,534	2,000	2,100
Total for disposition	1,873	2,379	2,580
Disposed of during the year	1,494	1,899	1,990
Pending at end of year	379	480	590
Posteffective amendments:			
Pending at beginning of year	214	157	250
Filed during the year	2,065	2,250	2,450
Total for disposition	2,279	2,407	2,700
Disposed of during the year	2,122	2,157	2,300
Pending at end of year	157	250	400
B. Registration statements of securities traded on exchanges:			
Pending at beginning of year	51	74	100
Filed during the year	395	400	400
Total for disposition	446	474	500
Disposed of during the year	372	374	400
Pending at end of year	74	100	100
C. Registration statements of securities traded in the over-the-counter market:			
Pending at beginning of year	417	437	70
Filed during the year	562	200	100
Total for disposition	979	637	170
Disposed of during the year	542	567	100
Pending at end of year	437	70	70
D. Examination of preliminary proxy statements and information statements to stockholders:			
Pending at beginningtof year	90	94	100
Filed during the year	4,385	5,000	5,300
Total for disposition	4,475	5,094	5,400
Disposed of during the year	4,381	4,994	5,300
Pending at end of the year	94	100	100
E. Proxy contests	35	40	40
F. Examination of annual reports (form 10-K):			
Pending at beginning of year	4,887	3,088	3,480
Filed during the year	5,645	6,500	7,000
Total for disposition	10,532	9,588	10,480
Disposed of during the year	7,444	6,108	6,280
Pending at end of year	3,088	3,480	4,200
G. Examination of semiannual reports (form 9-K):			
Pending at beginning of year	439	307	800
Filed during the year	4,421	5,500	6,000
Total for disposition	4,860	5,807	6,800
Disposed of during the year	4,553	5,007	5,750
Pending at end of year	307	800	1,050
H. Examination of current reports (form 8-K):			
Pending at beginning of year	1,515	1,281	1,981
Filed during the year	8,760	9,700	10,500
Total for disposition	10,275	10,981	12,481
Disposed of during the year	8,994	9,000	9,881
Pending at end of year	1,281	1,981	2,600
I. Examination of quarterly reports (form 7-K):			
Pending at beginning of year	322	207	100
Filed during the year	239	250	275
Total for disposition	561	457	375
Disposed of during the year	354	357	300
Pending at end of year	207	100	75
J. Ownership and transaction reports filed and disposed of	85,283	90,000	93,000
K. Public and interpretive letters	3,697	4,000	4,250

REGISTRATION STATEMENTS OF SECURITIES TRADED IN OVER-THE-COUNTER MARKETS

Mr. EVINS. Take a look at your registration statements of securities traded in the over-the-counter markets. This table shows at the beginning of 1968, 437; estimate at the beginning of 1969, only 70 cases.

Mr. COHEN. Carryover. The reason is, that by the end of 1968, most of the companies subject to registration of which we are aware, and except for other developing companies, will have registered. The statute provided for a two-step registration. The larger companies came in first and then the smaller ones the following year. By the end of 1968 we will have had most of them registered. We expect that during the ensuing year there will be additional companies as they meet the statutory tests.

EXAMINATION OF REPORTS

Mr. EVINS. You estimate in examination of proxy statements that you will have 100 reports pending at the end of 1969; 4,200 cases in examination of annual reports. How many annual reports and quarterly reports do you receive?

Mr. COHEN. We figure that the Commission receives, of all kinds documents of that general character, approximately 150,000 documents a year. That covers all the divisions.

Mr. EVINS. You spot check those, don't you?

Mr. COHEN. Well, we can spot check them. Some of them I think we do just about that. There are others that require more attention. As a matter of fact, we are now engaged—and I did not mention this earlier—in a very thoroughgoing review of our rules, regulations, and practices with respect to disclosure. I have asked one of the Commissioners to undertake this task with a team of staff personnel. They have been busy now for some little while and I hope that they will conclude the job by the summer. We need to know whether our requirements are keeping up with the times or whether some of the requirements can be abandoned.

Mr. EVINS. Very good.

TYPES OF REPORTS

You break down your reports as to annual, semiannual, and current and quarterly?

Mr. COHEN. Yes, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages 34–41.

(The pages follow:)

For 1969, no additional personnel is requested for this activity.

The Securities Act of 1933 provides that a registration statement for the sale of securities to the public shall become effective on the 20th day after filing unless the issuer files an amendment, which has the effect of starting a new 20-day period. The registration statement is designed to present to the investor, as required by the provisions of the Securities Act and the rules and regulations thereunder, material information concerning the company's business, its management and financial condition so that the investor may make an informed invest-

met judgment. The examining staff must examine each registration statement with this purpose in mind in order to determine whether the registration statement and prospectus meet the statutory standards of disclosure and the Commission's rules and regulations. This is accomplished as a matter of practice before the registration statement becomes effective in order that the Commission may properly exercise its functions in enforcing the law.

The Commission has no control over the volume or timing of these filings. Still the work in this area must be performed on schedules provided by the statutes or rules to meet urgent financing schedules.

Recognizing the importance of time to issuers and underwriters in financial transactions, the Commission attempts to meet any reasonable time schedule, if it appears that the registration statement meets the requirements of the statute. If it appears that the registration statement is false or misleading in material respects, it is necessary to determine what action should be taken to prevent the sale of securities on the basis of a false or inadequate prospectus. In general, three types of techniques are utilized in enforcing compliance with the statutes and rules with registrants and applicants:

(1) In the majority of the cases, disclosure and interpretation problems are resolved between the issuer, its representatives, and the staff of the Division by means of informal procedures such as correspondence, conferences, and voluntary action on the part of the persons subject to the statutes.

(2) In the remainder of the cases, these informal procedures are inadequate to secure compliance with the law, and investigative procedures must be pursued either under a formal order of investigation or by informal investigation procedures with the cooperation of the registrant or applicant. If the inquiry is under a formal order, records are subpenaed and testimony may be taken under oath either in the field or the headquarters office or both. If the inquiry is made without a formal order of investigation, records may be requested and persons interviewed without use of the subpena power and without the taking of testimony. As a result of these activities, which frequently involve the dispatch of investigators or investigating teams to the offices of underwriters and issuers or in cases or oil or mining companies a physical examination of the issuer's properties, the filing in question may be amended and the case disposed of without further Commission action.

(3) In a number of cases, however, preliminary investigations of the type described in paragraph (2) above result in the institution of stoporder or suspension proceedings, which in turn may result in court action or reference to the Department of Justice for criminal prosecution.

It is essential for the protection of the public investor that inadequate or misleading registration statements and prospectuses be amended to conform to the statutory requirements of disclosure or that the sale of the securities be prevented.

An issuer may register a class of securities on a securities exchange by filing with the Commission and the exchange a registration statement which discloses pertinent financial information concerning the issuer and its affairs. The disclosure required in the registration statement includes a description of the issuer's business and capital structure, the terms of its securities, the names of those who direct its affairs, the remuneration paid to its officers and directors, and the allotment of options, bonuses, and profit-sharing plans. Financial statements certified by independent accountants must be filed as part of the application.

A statement under the Securities Exchange Act of 1934 for registration of a security on a national securities exchange becomes effective 30 days after the receipt by the Commission of a certification by the exchange that the security has been approved for listing and registration by the exchange, or such shorter period as the Commission may determine.

Registration of certain classes of securities are not administered by the Commission.

The Commission's proxy rules are designed to provide persons from whom proxies are solicited adequate information on which they can make informed decisions as to how to vote.

The rules are applicable to any solicitation of proxies with respect to a security registered pursuant to section 12 of the Securities Exchange Act. These include securities listed on national securities exchanges and those traded in the over-the-counter market. The rules require that persons who intend soliciting proxies comply with the procedure set forth therein. The procedure includes the

filing of proposed proxy soliciting material containing specified disclosure with the Commission in preliminary form prior to the date of the proposed solicitation. Where preliminary material fails to meet the prescribed disclosure standards, the management or others responsible for its preparation are notified informally and given an opportunity to avoid such defects in the preparation of the proxy material in the definitive form in which it is furnished to stockholders.

Rules regarding information statements are comparable to the rules applicable to solicitation of proxies.

Approximately 69 percent of the proxy statements are filed in the early months of the calendar year, with almost 50 percent being filed in February and March. These statements must be examined by the same members of the staff involved in the examination of registration statements for financing, the examination of annual and periodic reports and the processing of registration statements of over-the-counter companies.

Under the statute, as implemented by the Commission's rules, proxy material must be filed in preliminary form for review by the staff before it is used. Time is normally very short and during this period the staff is required to make its review of this material quickly in order not to delay important action by stockholders at their meetings. Proxy contests are often bitterly disputed and add appreciably to the staff's burden of quick decision.

One of the important and basic purposes of the Securities Exchange Act of 1934 is to require issuers with publicly traded securities to keep the investing public informed by filing with the Commission and national securities exchanges adequate and reliable reports on an annual and periodic basis showing their financial condition and the occurrence of events in their operations of significance to investors. Prior to 1964, these reporting requirements were applicable only to issuers with securities listed on national securities exchanges. The 1964 Securities Acts amendments provided that certain additional issuers whose securities are traded in the over-the-counter market are required, subject to the rules and regulations of the Commission, to file similar data with the Commission. In addition, section 15(d) of the Exchange Act requires an issuer filing a registration statement under the Securities Act of 1933 also to file periodic reports for at least 1 year after the effective date of the registration statement.

The periodic reports to be filed by these issuers include annual reports, semiannual reports, and other current reports, as described below:

(*a*) The principal annual reports form is form 10–K, which is designed to keep up to date the information furnished on form 10 or the regisration statement.

(*b*) Semiannual reports required to be furnished on form 9–K are devoted chiefly to furnishing midyear financial data reflecting the results of operations for that period.

(*c*) Current reports on form 8–K are required to be filed for the month in which any of certain specified events have occurred. A report on this form is required when there are changes in control of the registrant, important acquisitions or dispositions of assets, the institution or termination of important legal proceedings, and important changes in the registrant's capital securities or in the amount thereof outstanding.

(*d*) Quarterly reports on form 7–K are required to be filed by real estate investment trusts and real estate companies who make distribution to shareholders from sources other than current or retained earnings.

The value of the reporting requirements to the investing public depends upon the timeliness of the information and the adequacy of the compliance with the full scope of the disclosure requirements. It is essential that incomplete or misleading reports be corrected promptly.

2. STOP-ORDER PROCEEDINGS AND OTHER ADMINISTRATIVE ACTIONS

	1967 actual	1968 estimate	1969 estimate
Pending at the beginning of the year	49	51	48
Instituted during the year	23	25	33
Total for completion	72	76	81
Closed during the year	21	28	33
Pending at end of year	51	48	48

For 1969, no additional personnel are requested for this activity.

The primary function of the Branch of Administrative Proceedings and Investigations is to provide experienced trial attorneys to supervise and conduct investigations, stop-order proceedings, delisting proceedings to terminate registration of securities on a national securities exchange, administrative proceedings to enforce compliance regarding securities traded in the over-the-counter market, suspension actions, and to render assistance in the preparation of criminal references, and to assist the Department of Justic in prosecutions of these cases. In essence, the Branch of Administrative Proceedings and Investigations provides the specialized skills essential to the expeditious handling of the enforcement work handled by the Division. Attorneys, accountants, and analysts assigned to the examining branches also are utilized during the course of these administrative proceedings.

Stop-order proceedings, formal investigations, and administrative proceedings are initiated when there have been serious violations of the law or where such violations are suspected or anticipated. These administrative actions are an important aspect of the Commission's enforcement program for maintaining high standards of conduct in the sale of securities to the public. The Commission believes that in order to discharge its duties under the act a firm position with respect to the filing of incomplete and misleading data for proposed public issues must be maintained.

3. ADMINISTRATION OF REGULATION A AND REGULATION F

	1967 actual	1968 estimate	1969 estimate
(a) Regulation F statements filed	19	22	22
(b) Suspension orders instituted	13	14	15
(c) Postaudit of regulation A and regulation F filings	19	23	35
(d) Examination of regulation A filings	10	18	18
(e) Applications for waiver of disqualification, rule 252F	6	10	12

For 1969, no additional personnel are requested for this activity.

The Branch of Small Issues is responsible for the overall direction and coordination of the administration of regulations A and F by the Commission's regional offices. Regulation A provides a limited exemption for securities offerings not exceeding $300,000 in any one year, while regulation F provides an exemption for certain offerings involving assessable stock. Provision has been made for filing the notifications, sales material, and offering circulars for these exempt issues in one of the nine regional offices of the Commission nearest to the place of business of the issuing company. This decentralized procedure makes it easier for the small business enterprise to comply with the Commission's requirements and facilitates the Commission's enforcement work relating to these small issues.

The Branch also assists each of the regional offices in the handling of any regulation A or F exemption at the request of the regional administrator where he believes that proper and adequate disposition of the matter requires the assistance of the professional personnel in the central office. Furthermore, in an effort to insure uniformity of administration of regulations A and F, the Branch conducts a postaudit of a sample of the filings in each region.

In 1967, the Branch examined 10 regulation A filings originally filed in regional offices. This was necessary in order to relieve field offices during temporary increases in the number of filings received.

Effective administration of regulations A and F for the detection and prevention of fraud in a field involving predominantly speculative securities of promotional ventures requires close watch of selling practices and other developments. This is essential in order to insure adequate and effective field work for the protection of the public and to prepare and adopt amendments of the rules as developments in this important area of the Commission's work require.

DEFICIENCIES IN REGISTRATION STATEMENTS

Mr. EVINS. If the registration statement is filed and in your preliminary examination you find a defect, what is the process for perfecting the defect?

Mr. COHEN. Normally we write them a letter or we will call them on the telephone or we will meet with them and explain the areas that need amendment, that is, where we believe that a proper amendment can be effected by this informal process, which means about 99 percent of the cases.

There are situations, however, where we have to conduct an investigation and in some few cases, relatively few, we have to conduct a proceeding.

Mr. EVINS. This would be a stop-order proceeding?

Mr. COHEN. Yes, sir.

Mr. EVINS. If they file a certificate that has so many defects you do not think it can be perfected by letter or telephone, you enter a stop-order proceeding. What is the nature of that?

Mr. COHEN. We conduct an investigation first to determine whether or not the errors or inadequacies are due to a willful disregard of the rules or worse.

Mr. EVINS. These are companies proposing to sell stock in excess of $300,000?

Mr. COHEN. Yes, sir.

Mr. EVINS. If those above $300,000 make this great number of errors, what about those below the $300,000 level?

Mr. COHEN. They make a great number of errors, too. We deal with that informally, essentially the same way. Formally we have a slightly different procedure, but it has the same effect. We conduct an investigation and then initiate a proceeding for the suspension of the offering.

STOP-ORDER PROCEEDINGS

Mr. EVINS. Mr. Chairman, your chart on page 39 does not show you are getting ahead. You start out with 49 and end up with 48. The input is about as large as your output.

Mr. COHEN. Right. These proceedings, if I may say so, are very lengthy proceedings and they are very difficult. I am glad we keep our heads above water.

Mr. EVINS. You say this is inadequate?

Mr. COHEN. Yes, sir. Sometimes there is a disagreement and we have to proceed in a regular administrative proceeding which means on the record before a hearing officer.

Mr. EVINS. Oral hearing examiners?

Mr. COHEN. That is right.

Mr. EVINS. You state:

> Stop-order proceedings, formal investigations, and administrative proceedings are initiated when there have been serious violations of the law or where such violations are suspected or anticipated. These administrative actions are an important aspect of the Commission's enforcement program for maintaining high standards of conduct in the sale of securities to the public. The Commission believes that in order to discharge its duties under the Act, a firm position with respect to the filing of incomplete and misleading data for the proposed public issues must be maintained.

How do you anticipate one?

Mr. COHEN. A policeman, after a while, acquires a certain sense of smell.

Mr. EVINS. You say the Commission believes that in order to discharge its duties under the act, a firm position with respect to the

filing of incomplete or misleading data for proposed public issues must be maintained. This has been standard all along, has it not?

Mr. COHEN. Yes, sir.

REGULATION A AND REGULATION F

Mr. EVINS. Regulation A provides a limited exemption of securities offerings. This is what we were talking about earlier?

Mr. COHEN. That is right. Regulation F deals with another aspect of it.

Mr. EVINS. Do these exemptions encourage companies to keep offerings below the $300,000 level?

Mr. COHEN. They probably have that effect in some situations; yes, sir. You will remember that a Congressman, no longer in the Congress, each year introduced a bill to eliminate this statutory exemption. It never received much attention. However, going back some years—and you may remember this, Mr. Jonas—Mr. Bennett, of Michigan, was much concerned about this whole area, including the intrastate exemption. He thought it was a creature of sin or evil, or whatever. Considerable hearings were held. In the end, it was determined not to change this situation.

EXCESS BONUSES AND OPTIONS

Mr. EVINS. Does the Commission have any yardstick or authority over excess bonuses or options?

Mr. COHEN. No, sir.

Mr. EVINS. You merely require disclosure?

Mr. COHEN. You put your finger on a very, very urgent current problem. Our responsibility is, in the first instance, to get disclosure in the prospectus. If what is being done may also involve a violation of fraud provisions, then we can deal with those subject to our jurisdiction, the broker-dealer, underwriter, and so forth. However, there are many areas where it would be difficult to show fraud except in the sense they are taking just too much.

We had a case recently where one of the Commissioners calculated that the offering itself was costing this little company 47 percent of the money to be raised from the public. The NASD, at our suggestion, and, in fact, at our insistence, has undertaken to deal with this problem. Lately we have renewed our request and they assured us, and we know they are attempting to be fair, that they would be more vigorous in this area. There is a pattern that developed in late 1960 and 1961, and wound up in the crash of 1962. We are very much afraid the same sort of thing is happening.

Some underwriters take advantage of the little companies that cannot help themselves. They are caught in a vise. We try to get the disclosure from the point of view of the investors, and indirectly that helps the issuer, too.

Mr. JONAS. Is that pretty lucrative business for my brothers at the bar?

Mr. COHEN. Yes, sir. The securities field is very lucrative, and it has become a practice which is known to members of the bar in every State

of the Union. In fact, very few law schools today do not have a separate course or part of their corporation law course devoted to securities law. This is lucrative; yes, sir.

Division of Trading and Markets

Mr. Evins. Gentlemen, we will take a look at the Division of Trading and Markets. This Division has two broad areas for review: it polices the securities market in order to detect and eliminate practices which are harmful to investors or impair public confidence. We hope it does it well. The second area is developing the Commission's own rules, reviewing the rules of the NASD, and regulating persons engaged in the securities business.

What is the thinking of the Commission about public confidence in the market at the present time?

Mr. Cohen. I think it is still pretty good. What we are concerned about is that this confidence not be impaired. That is what the whole thing is built on. That is really the name of the game.

If that confidence is impaired, it will be difficult for issuers to raise funds, investors will be concerned about allocating their excess savings to these markets. This could have a serious effect on the economy.

Mr. Evins. You say over the years as the securities market has become more complex, so have fraudulent and manipulative practices for taking money from investors.

Mr. Cohen. That is because that is where the honey is.

Mr. Evins. Investigations and enforcement actions now require the talents of able and sophisticated employees, expended over long periods of time, to provide an effective measure of protection to the public, and this burden has been increased by the rising number of criminal prosecutions in the securities field in recent years.

How?

Mr. Cohen. As I indicated, our computer has made it possible for us to detect many more cases much sooner and much more effectively than we could by our old manual methods.

Mr. Evins. Your NASD, the industry, and securities dealers are self-regulating?

Mr. Cohen. Yes, sir.

NON-NASD BROKER-DEALERS

Mr. Evins. Then you have some that are not members of the association and you have to give a closer look to those than you do the others?

Mr. Cohen. Under the 1964 amendments, the Congress decided that the Commission should, with respect to those broker-dealers, also act as a kind of NASD. In other words, we were supposed to develop the same types of rules based upon principles of high commercial honor and just and equitable principles of trade, testing, and the other activities conducted by the NASD.

We are doing that. We call it at home by a short name, SECO. It really means SEC regulation of over the counter broker-dealers who choose not to be members of the NASD.

Mr. EVINS. Does the Commission give more attention to non-members of the NASD than it does to the members?

Mr. COHEN. We do in this sense; since there is no NASD for these people, we have the full responsibility.

I should say that, even in the NASD area, we still have responsibility by way of considering appeals from their actions, their rules and regulations. We review their operations and, of course, many of the rules we write relate to both NASD and non-NASD members.

Mr. EVINS. Off the record.

(Discussion off the record.)

INVESTIGATIONS AND ENFORCEMENT ACTIONS

Mr. EVINS. On page 46 you show the workload for the investigations and enforcement program. Broker-dealer proceedings, in 1967 you started out the year with 86, then this year you expect to have 67, and in 1969 you estimate 50. That is a declining workload. But opened during the year, it's 33, 35 and then 45. Pending at the end of the fiscal year 1969, you estimate 43.

Mr. COHEN. This is based in part on the hope that you will grant our request and upon increased efficiency of our staff.

Mr. EVINS. Very good. You said you have authority for suspension of trading in extreme situations, but you have not used that, or you use it sparingly.

Mr. COHEN. We do use it.

Mr. JONAS. The Exchange used it right frequently last year, did it not, the American Exchange?

Mr. COHEN. Yes. We do, too. As a matter of fact, I indicated earlier we have used it in the last year or two perhaps more than in all the prior years of the Commission. But the Commission feels this is an extraordinary remedy because people are locked in. It is a 10-day suspension which requires us to reexamine the situation every 10 days. As soon as we feel the situation has been clarified—sometimes it takes a long time, unfortunately—but wherever it is possible to clarify the situation promptly, we lift the suspension so trading can go on.

Mr. JONAS. The exchange can suspend.

Mr. COHEN. Only the exchange. We have to deal with trading in the same security off the exchange as well as securities not traded on the Exchange.

Mr. JONAS. The exchange has that authority itself?

Mr. COHEN. Oh, yes; and exchanges exercise it, both exchanges have exercised it in the last couple of years more than they had in earlier years.

ENFORCEMENT SEMINAR AT FORT WORTH

Mr. EVINS. You also point out that for the first time you have encouraged regional offices to hold seminars in which there is in attendance the local sheriffs, along with the police inspectors, securities commissioners, and the self-regulatory bodies. Tell us about Fort Worth. What did you do out there?

Mr. COHEN. Our administrator there had a good one. Let him tell you about it.

Mr. BOLTZ. We had an annual meeting last year.

Mr. EVINS. How many attended?

Mr. BOLTZ. We had about 50 attend last year's meeting, among them State securities commissioners and their staffs.

Mr. EVINS. These were State securities commissioners for the Southwest territory?

Mr. BOLTZ. For our whole region.

Mr. COHEN. Please name the States involved.

Mr. BOLTZ. The States involved are Oklahoma, Kansas, Texas, Arkansas, and Louisiana. It was a combination training session and cooperative effort. We had utilized the computer to make information available to the State inspectors and their staffs. It has been particularly useful in checking the backgrounds of some of the people and in market surveillance. As the chairman indicated, our effort is a brush fire effect, stamp out the fire before the fire becomes large.

Mr. EVINS. You think they have more information now and that it was a worthwhile meeting?

Mr. BOLTZ. Yes, sir.

URANIUM BOOM

Mr. EVINS. You had the manager from Denver out there, I hope. He is the one who let all those stocks be sold a few years ago on uranium. They had 100 companies mushroom up and swindle the public.

Mr. COHEN. Yes. I was involved in that personally, so I can testify to that.

Mr. EVINS. That was over-the-counter and under the counter, wasn't it?

Mr. COHEN. Yes. As a matter of fact, the House Interstate and Foreign Commerce Committee held hearings out there during 1954 or 1955, I cannot remember the year now, particularly with respect to that. Unfortunately, both of the ranking Congressmen are now dead. Judge Klein died, and Mr. Bennett of Michigan. Those two Congressmen conducted the hearings in Denver. It was quite a revealing situation. It had a tremendous effect that the Congress came out there to conduct hearings. It sort of put the fear of God in some; not all, but in some.

Mr. EVINS. Mr. Boltz, what do you and Mr. Frankhauser have to recommend to the Congress or this committee or the Commission as a result of your experiences?

Mr. FRANKHAUSER. Well, in New York we carry out a number of programs under the jurisdiction of three operating divisions and, of course, try to execute our assignments in fulfilling Commission program policy. As Chairman Cohen has indicated, every enforcement agency, I guess, probably could use more people, but in these times we, of course, fitting into the overall Commission program, are trying to execute the Commisison's enforcement program as quickly and as rapidly as possible to stop a number of these frauds, which the Chairman also indicated, before all the horses are stolen. To that extent we are trying to do our job and I think we are.

ENFORCEMENT SEMINAR IN NEW YORK

Mr. EVINS. Did all the exchanges attend your regional meeting in New York?

Mr. FRANKHAUSER. We plan to have a meeting April 15.

Mr. COHEN. They have not had one yet.

Mr. FRANKHAUSER. We plan to have one in mid-April and we plan to have representatives of the exchanges attend.

Mr. COHEN. I think it is fair to say that in the New York area, there is frequent communication among all of the exchanges and our office and the U.S. Attorney's Office as well as the postal inspectors and the State officials. The State attorney general and his assistants are very vigorous in this area, too, and there is very good communication with them. Indeed, Commissioner Smith, at their request, went up and appeared before a committee set up by the attorney general in New York to deal with some improvements that they hope to effect in New York State.

Mr. OWENS. May I add one word?

Mr. EVINS. Yes.

Mr. OWENS. I conferred with Mr. Frankhauser in regard to this proposed meeting. One of the things we have been waiting on is that the New York office has been in the process of moving, which has delayed, among other things, the physical facilities available. We have an agenda already worked up as of this morning for what I am sure will be a good meeting, based on the experience of some of the other regional meetings.

Mr. EVINS. I think you referred to this earlier. You state here that the office of enforcement maintains a file of individuals who have violated laws pertaining to securities transactions.

Mr. COHEN. Yes.

Mr. EVINS. You state that on the basis of independent review, 46 cases were referred to the Department of Justice in 1967.

Mr. COHEN. But this little publication that we put out is sent to approximately 650 law enforcement and other cooperating agencies, including the FBI, State attorneys general, Post Office Department. This is all on page 51, Mr. Chairman.

JUSTIFICATION MATERIAL

Mr. EVINS. Very good. We will place 43 through 53 in the record.
(The pages follow:)

DIVISION OF TRADING AND MARKETS

FUNCTIONAL STATEMENT

The Division of Trading and Markets serves the Commission in two broad areas: (1) It polices the securities markets in order to detect and eliminate practices which are harmful to investors or impair public confidence, and (2) it is responsible for developing the Commission's own rules, and reviewing the rules of the NASD and the various securities exchanges, which regulate the conduct of

broker-dealers, investment advisers and other persons engaged in the securities business.

The problems with which the Division's enforcement office deals have been a principal concern of the Commission since its formation. Over the years, as the securities markets have become more complex, so have fraudulent and manipulative schemes for taking money from investors. Investigations and enforcement actions now require the talents of able and sophisticated employees, expended over long periods of time, to provide an effective measure of protection to the public, and this burden has been increased by the rising number of criminal prosecutions in the securities field in recent years. The Commission's new computer, by enabling the Division to maintain effective surveillance over a vastly increased number of securities and broker-dealers, has greatly facilitated our work in this area.

In the area of regulation, the dramatic growth of institutional investors, particularly pension funds and mutual funds, has placed tremendous strains on market mechanisms which were designed to handle the needs and transactions of smaller investors. The development of automation, and its application to the securities business, while it has added to the complexity of the problems, has also opened possibilities for imaginative new solutions to these problems. These dramatic and complex developments require the Division to devote a great deal of time to basic studies of the mechanisms of the securities markets, to enable it to work with the securities exchanges, the National Association of Securities Dealers, and other interested groups in modifying and improving the rules which govern securities trading.

The Division is responsible for (1) administering the provisions of the Securities Exchange Act of 1934 and the Investment Advisers Act of 1940 pertaining to the detection and prevention of illegal or fraudulent practices in the marketing and trading of securities both on the exchanges and in the over-the-counter markets; (2) the registration and regulation of national securities exchanges, national securities associations of brokers and dealers, brokers and dealers, and investment advisers; (3) the coordination and supervision of the investigative and other enforcement activities of the regional offices; (4) the investigation and trial of certain administrative, civil, and criminal cases; and (5) implementing those provisions of the new legislation (Securities Acts Amendments of 1964) which strengthened the regulation of brokers and dealers, including qualification standards and disciplinary controls as well as the regulation of non-NASD members.

JUSTIFICATION

Fiscal year	Personal services	
	Cost	Positions
1968	$1,618,000	168
Increase	111,800	9
1969	1,729,800	177

For 1969, nine additional positions (four attorneys, one investigator, one secretary, and three complaint processors) are requested for the Division. Of the total, two of these positions are required in the Office of Regulation to meet the Commission's continuing responsibilities regarding the regulation and oversight of the exchanges and the over-the-counter markets; two positions for the regulation of non-NASD brokers and dealers; one position for the enforcement area; and the remaining four positions for responding to complaints and inquiries on a prompt basis. The increase of $111,800 in 1969 over 1968 represents (1) the cost ($68,800) of the additional nine positions and (2) $43,000 for mandatory pay increases.

1. INVESTIGATION AND ENFORCEMENT

	1967 actual	1968 estimate	1969 estimate
1. Investigations including administrative, civil and criminal proceedings:			
Pending at beginning of year	772	789	789
Opened during the year	390	390	395
Subtotal	1,162	1,179	1,184
Closed during the year	373	390	395
Pending at end of year	789	789	789
a. Broker-dealer proceedings			
Pending at beginning of year	86	67	50
Opened during the year	33	35	45
Subtotal	119	102	95
Closed during the year	52	52	52
Pending at end of year	67	50	43
b. Investment adviser proceedings:			
Pending at beginning of year	8	6	5
Opened during the year	3	5	7
Subtotal	11	11	12
Closed during the year	5	6	7
Pending at end of year	6	5	5
c. Injunction actions:			
Pending at beginning of year	80	86	86
Filed during the year	71	71	75
Subtotal	151	157	161
Disposed of during the year	65	71	75
Pending at end of year	86	86	86
d. Criminal reference reports referred to the Department of Justice:			
Pending at beginning of year	124	113	105
Referred during the year	46	46	50
Subtotal	170	159	155
Disposed of during the year	57	54	55
Pending at end of year	113	105	100
2. Review of broker-dealer inspection reports	100	100	100
3. Review of investment adviser inspection reports	1	5	5

Note: For fiscal 1969, 1 investigator position is requested for this activity.

During the last year, the securities markets have experienced trading volume and price movement of unprecedented proportion. It has become evident that a substantial number of active trading issues have been the subject of manipulation and other fraudulent practices and, accordingly, such activities have generated grave enforcement problems.

During the same period of time, the Commission also encountered other new and unique enforcement problems involving interpositioning, insider trading, corporate takeovers through tender offers, market purchases and mergers, and a corporation's purchase of its own securities. As a result of these activities the Office of Enforcement has found it necessary to divert a substantial portion of its resources toward these areas. It seems clear that a resolution of the problems thus far encountered will require a prolonged concentration of manpower for such purposes.

As an illustration of the enforcement burden, we have or are about to initiate the following actions as a result of the developments in the securities markets. Some of these actions will undoubtedly continue in fiscal 1969:

(1) Inquiring into the trading of a large number of Exchange and over-the-counter securities;

(2) Inquiry into the overall trading activities of selected nonmember and member firms of the principal exchanges;

(3) Direct assistance to the U.S. attorney of the Southern District of New York in the criminal prosecution of Amex manipulation cases (two indictments have already been entered and it is anticipated that several more will follow);

(4) Develop long-range programs in the following areas: (*a*) suspension of trading; (*b*) insider trading; (*c*) corporate takeover by tender, market purchases or merger; (*d*) corporation's purchase of its own securities; (*e*) interpositioning; (*f*) exchange and over-the-counter market trading activities; and (*g*) entrance qualifications for investment advisers.

The additional investigator requested for this activity will relieve the senior attorneys from the more routine, time consuming but necessary chores involved in investigations and enforcement actions. Among other things, the investigator will examine and analyze books and records, reconstruct markets conditions, discuss his findings with appropriate officials, and assist in preparing cases for trial.

As indicated previously, the Office of Enforcement is generally reacting to activities caused by outside stimuli. The Commission must act promptly in order to stop an activity which is causing injury to the investing public. Many of the recommendatons and actions proposed by this Office are the result of urgent telephonic and telegraphic requests from our regional offices, requiring same day service.

As part of a recently formulated Commission policy, this Division has been intensifying its efforts to coordinate its enforcement and regulatory programs with the various State securities commissions, stock exchanges, the National Association of Securities Dealers, and other Federal agencies in order to eliminate unnecessary duplication of efforts and to permit the Commission and the other interested agencies to maximize use of their limited resources. In the past year, the Commission has extended invitations to the staffs of every State Securities Commission to attend our annual 2-week enforcement training program in Washington, D.C. Approximately 35 State enforcement personnel and three Canadian officials attended the program. Also for the first time this past year, we have encouraged each of our regional offices to conduct local enforcement seminars at which our local staffs, personnel of State securities commissions, postal inspectors, Federal, State, and local prosecutors and local representatives of such self-regulatory bodies as the National Association of Securities Dealers can join together to discuss regional enforcement problems and to devise methods to increase cooperation and communication between State, Federal, and local agencies in enforcing the securities laws. Such seminars have been sponsored in the past few months by our offices in Fort Worth, Washington, D.C., Chicago, Boston, San Francisco, and Seattle and others are now being planned by our remaining regional offices. We are also continuing to encourage a mutual exchange of information between the Commission and the other enforcement agencies.

The Office of Enforcement and the Office of Criminal Reference and Special Proceedings perform the following functions under this activity:

The Office of Enforcement supervises and coordinates the Commission's enforcement activities by reviewing and rendering whatever assistance may be required by various regional offices and the Division in these investigations. This may include direct assistance to regional offices where a particular office is overburdened as a result of temporary variations in its enforcement workload and by providing direct assistance in the preparation and trial of significant injuctive cases.

Upon completion of an investigation, the regional office submits a recommendation that appropriate action be instituted by the Commission or that the investigation be closed. These reports are reviewed by the Office of Enforcement for the purposes of (1) recommending to the Commission whether a civil proceeding seeking injunctive relief or administrative proceedings against a broker-dealer or investment adviser should be instituted, and (2) assuring consistency and uniformity among the regions.

The Office of Enforcement also conducts the investigations of cases with cross regional lines, present novel or sensitive issues or which involve persons who appear to be very important and controlling members of organized syndicates in the field of securities and whose activities have proved to have a significant impact on the Commission's overall enforcement program. Investigations are conducted on a very selective basis. Generally, the staff of the Division attempts to develop the facts in as many instances as possible with a determination of what formal action to take being dependent on such factors as the nature of the violations, the identity of the violators, and the amount of money and number of investors involved. The Commission tries to limit its investigations to those situations in which the offending conduct cannot be handled on a local basis and where its actions will not only restrain the activities of the involved parties

but will also have a deterent effect on others similarly situated. This office also coordinates and processes all broker-dealer and investment adviser inspection reports, reviewing some on a selective basis.

Beginning in fiscal 1968, inspections will differ in emphasis and will be much broader in scope. In addition inspections will be conducted on a selected basis including emphasis upon inspection of broker-dealers not subject to inspection by other regulatory and self-regulatory agencies. It is, therefore, anticipated that fewer inspections will be conducted in 1968 and 1969, but the results, in terms of meaningful enforcement and regulation should be greatly improved. In lieu of routine inspections, periodic questionnaires or other types of written inquiries or reports may be utilized.

As a part of its responsibilites for coordinating all the Commission's investigations, the Office of Enforcement also maintains files on individuals who have violated laws in connection with securities transactions. In addition to supplying such information to the Commission's staff and other interested law enforcement agencies, a securities violations bulletin is published quarterly and sent to approximately 650 law enforcement and other cooperating agencies, including the Federal Bureau of Investigation, State attorneys general, the Post Office Department, and others engaged in the prevention, detection and prosecution of fraud.

The Office of Criminal Reference and Special Proceedings has overall supervision of all the Commission's cases that have been referred for criminal prosecution to U.S. attorneys throughout the 50 States. The office initially makes an independent review of all cases which are recommended by regional offices or divisions of the headquarters office for criminal prosecution. This review is to determine whether the case is appropriate for criminal prosecution and whether the available evidence establishes the violations and the culpability of the individuals recommended as proposed defendants. On the basis of this independent review, 46 cases were referred to the Department of Justice during fiscal 1967.

In addition to making an independent review of the cases recommended for criminal prosecution, the Office of Criminal Reference and Special Proceedings supervises and directs the investigation of major or sensitive cases for the purposes of obtaining the most expeditious and appropriate criminal prosecution. These cases are of the most complex nature requiring highly experienced attorneys. As part of its responsibility for supervising the prosecution of those cases which are referred by the Commission to the Department of Justice for criminal prosecution, the office prepares in many cases the briefs on appeal from convictions obtained in such cases. This office also prepares in many cases the briefs that are submitted to trial courts in opposition to defendants' motions in the cases pending throughout the country.

The Office of Criminal Reference and Special Proceedings is also responsible for achieving greater effectiveness in the Division's administrative litigation involving broker-dealers, investment advisers, and associated persons and for coordinating among regional offices and headquarters divisions any legal or policy questions arising in the conduct of these proceedings. The office reviews all current court decisions, Commission opinions and rulings, and hearing examiners' initial decisions and rulings in order to furnish to the staff of the divisions and regional offices advice and assistance in legal research, brief writing, motion practices and oral arguments before the Commission. The office has the direct responsibility for conducting or supervising those administrative proceedings which involve novel questions or are sensitive or unusually complex.

2. REGULATION OF EXCHANGES AND THE OVER-THE-COUNTER MARKET

	1967 actual	1968 estimate	1969 estimate
1. Exchange regulation activities:			
Review of changes in the rules and procedures of exchanges	261	300	320
Investigations conducted, analyses and reports prepared in connection with rules and procedures of exchanges	163	165	175
Insoections of exchanges	20	20	25
2. Regulation of registered association (NASD):			
Formal amendments to rules filed and examined	50	60	60
Inspections made of NASD	4	10	10
Analyses and reports prepared relating to rules and procedures of association	48	60	60
3. Market surveillance and stabilization:			
Deficiency letters and other correspondence with underwriters	970	1,000	1,000
Securities watched for manipulative activities	12,000	13,000	13,000

Note: For 1969, 2 attorney positions are requested for this activity. These positions are required in the Office of Regulation in the Division of Trading and Markets.

Mr. EVINS. Your workload is on page 53, regulation of exchanges and the over-the-counter markets. Under the heading securities watched for manipulative activities, they go up from 12,000 to 13,000. Deficiency letters and other correspondence with underwriters is about a thousand.

Mr. COHEN. I think that 12,000 is perhaps the answer to Mr. Wyman's question.

Mr. EVINS. Some interesting figures appear at the bottom of page 54. Recent years have seen a startling growth in the number of investors, the number of transactions, dollar volume, and the market value of securities traded on the stock exchanges. There are now some 24 million investors compared with 17 million in calendar 1962. The chairman testified to this earlier in his statement. You say also that in recent days the American Stock Exchange established a new record, running as high as 10 million sales as compared with an average of 2.8 million shares in calendar 1966.

You refer on page 56 to institutional membership. In California you say yes and in New York you say no.

Mr. COHEN. I want to be perfectly clear to you on that, Mr. Chairman. We have not objected to this activity, because we told them that the whole matter is under consideration and they understand that.

ARBITRAGE

Mr. JONAS. Can you list X stock on the New York Stock Exchange and also the California or San Francisco exchange?

Mr. COHEN. Yes.

Mr. JONAS. Many of them are listed on both?

Mr. COHEN. Most of them.

Mr. JONAS. Doesn't that offer a real avenue for quick profits?

Mr. COHEN. No. You mean, because of the arbitrage?

Mr. JONAS. The timelag.

Mr. COHEN. Well, there is a little arbitrage between markets, but today almost everything is instantaneous, practically. So arbitrage is no longer the factor it was at some previous time.

Mr. JONAS. How about New York and London?

Mr. COHEN. There is certain arbitrage there, yes, sir. As a matter of fact, I once had the privilege of sitting at an arbitrageur's desk in London while he was talking to Zurich, to Amsterdam, and to New York, and he was making deals all the way.

Mr. WYMAN. What does arbitrage mean?

Mr. COHEN. You buy in one market and sell in another because of the difference in price. In my opinion, those fellows have the sharpest pencils in the world.

Mr. WYMAN. If I may, Mr. Jonas?

Mr. JONAS. Yes.

Mr. WYMAN. If the New York Exchange close at 3 o'clock or at 2 o'clock and the San Francisco or California exchange does not close

until 5 o'clock, there is 3 hours there to continue trading in something that is shut off in New York, is there not?

Mr. COHEN. That is true. It does happen. There is some continued trading. Sometimes this may be significant if some news hits the wires after the New York Stock Exchange has closed, which might affect the particular company and it may have some reaction on the Pacific coast stock exchange.

Mr. WYMAN. For example, if a person had been unable to buy, let's say, a thousand shares of Benguet when it was on the high road a while back——

Mr. COHEN. It is still on the high road.

Mr. WYMAN (continuing). He could have gone out to California and bought it, made one phone call out there and bought it?

Mr. COHEN. After hours, you mean? Sure. As a matter of fact, he could have bought it after hours in New York, too, if he found somebody in the so-called third market who was willing to sell him the shares. The third market is the word that is used to describe the market created by certain people who are not members of the exchange but who are willing to buy and sell listed securities. So you can do it in New York, in Chicago, and on the Pacific coast.

Mr. JONAS. Selling listed securities over the counter?

Mr. COHEN. Yes, exactly.

Mr. JONAS. It looks to me like that difference may give real opportunity for profits if the market is going down, say in New York, and it closes on the strong downside and you still have 3 hours to unload.

Mr. COHEN. I think there are some people who do take advantage of that.

Mr. JONAS. There isn't any way to avoid that?

Mr. COHEN. I think that when there is a real emergency situation—and I cannot now recall when that was last used—the Pacific coast stock exchange might close down at the same time New York does to prevent that. But then you still have the over-the-counter possibilities. Because of the nature of the over-the-counter markets, it isn't quite as easy or as readily available. Besides, the people in the over-the-counter market will immediately adjust their prices, so that it may not be as significant.

INSPECTIONS OF BROKER-DEALERS

Mr. EVINS. Mr. Chairman, what is the nature of an inspection of a non-NASD broker-dealer as against an inspection of a member dealer?

Mr. COHEN. I think I will let one of our staff members tell you about it, but I do want to speak to one point because this may show up in our figures when we come back next year.

Because of this coordination program and this cooperation program that we have engaged in, we are trying to give the routine type examination to others who are willing to and can handle them. The State authority, for example, the NASD or the local stock exchange. We are now concentrating on the type of inspection that requires sophisticated and extended effort. For that reason we are concentrat-

ing on quality rather than on numbers. But to tell you about our procedures in some detail I will call on Mr. Pollack.

Mr. EVINS. Mr. Pollack, tell us the nature of your inspections.

Mr. POLLACK. We inspect the books and records of the brokerage office, and we now have a manual which is used as a checklist covering various items in the statutes.

In addition, since we are now developing rules for non-NASD members, this has been added as a supplement to the inspection manual. As the chairman has indicated, we are now concentrating our inspection activities primarily on those brokers who are not inspected by another organization; so that we are hopeful that we can inspect all of the non-NASD members at least once every 2 years.

Mr. EVINS. How many non-NASD members are there?

Mr. POLLACK. About 525.

Mr. EVINS. 525?

Mr. COHEN. That number will increase I think very substantially in the next year or so because of the influx of the insurance companies into this business.

Mr. POLLACK. We have estimated doing about 250 of those in fiscal 1969. In addition, we have to make some inspections of broker-dealers who are members of other organizations.

Mr. EVINS. Your members of the association are sort of self-policing. You get a report quarterly as to what is being done and if you have a suspicion, then you go out and check some of the members.

Mr. POLLACK. Correct.

Mr. EVINS. What about the nonmembers?

Mr. POLLACK. They may use that also with other brokers where we are conducting similar inspections.

Mr. EVINS. What do you find?

Mr. POLLACK. You may find that the books and records are behind in posting, you may find that they do not comply with the financial requirements or the so-called net capital rule, which is intended to provide a cushion to protect investors against insolvency losses in these brokerage institutions. You may find fraud, you may find conversion.

Mr. EVINS. Do you find a little embezzlement occasionally?

Mr. POLLACK. You may find that, too. You can find any kind of violation that any ingenious mind may conceive.

CIVIL ACTIONS

Mr. EVINS. All right. Suppose you find fraud or embezzlement, what do you do?

Mr. POLLACK. We would recommend to the Commission that we institute an injunctive action so that we can enjoin further violations and protect investors.

Mr. EVINS. Do you leave his door open or do you close it?

Mr. POLLACK. We have to get a court order to appoint a receiver to take over the enterprise. We ourselves do not have the authority to put a lock on the door but we can go into court and get immediate action of that kind.

Mr. WYMAN. How immediate?

Mr. POLLACK. As fast as we can draft the papers and get a hearing in the court.

Mr. EVINS. If you make an investigation and you find *x* broker-dealer is engaged in fraud and embezzlement, there is a press release issued, presumably, and I do not imagine that he would be doing much business the next day in view of the press release.

Mr. POLLACK. If we can get into court and get the injunction granted, he won't. But we must go into court in order to accomplish that.

Mr. WYMAN. You can't get into court in 24 hours, can you?

Mr. POLLACK. We have done it in certain cases.

Mr. COHEN. Yes; we have done it.

Mr. POLLACK. We have one case, with a listed security, where somebody made what I will describe as a phony tender offer, which kicked the price up $4 a share from $20 to roughly $24. We used the suspension power and 24 hours later we were in court, we received a temporary injunction and then a permanent injunction.

Mr. JONAS. Can you get a temporary injunction without notice?

Mr. POLLACK. You can get a temporary restraining order.

Mr. JONAS. I mean, is it hard to get a judge to sign one?

Mr. POLLACK. Most judges will require you to give some sort of oral notice to the other side for a TRO.

Mr. COHEN. But our practice is to advise the other side.

Mr. WYMAN. You shut off Zapata Offshore Drilling Co. last year under similar circumstances; you suspended the trading, didn't you?

Mr. COHEN. What was the name of the company?

Mr. WYMAN. Zapata.

Mr. COHEN. No; I don't know that we did.

Mr. POLLACK. That was mentioned in connection with the *Westec* case.

Mr. COHEN. Yes; I think that was involved.

Mr. POLLACK. This is one of the fastest cases where we suspended. We were in court in 24 hours, then we were able to lift the suspension and trading resumed.

Mr. COHEN. I think the answer is that we cannot always do it that well. It is rather unusual to move in in 24 hours. It usually takes a little longer. But I think the skills of our staff have developed to the point where I think it is fair to say that as to a fair number of cases we are in court just as promptly as anyone can expect. Unfortunately, there are some that we are awfully late on.

Mr. JONAS. I did not question your ability to get the papers and get to court. I was questioning the due process of closing a man up, or any judge issuing an order closing him up without a hearing.

Mr. COHEN. There is a hearing, but it is on notice.

Mr. JONAS. Yes; but we who practice law in the country give 10 days' notice, or something like that, some notice.

Mr. COHEN. Well, there is a question here, Mr. Jonas, of weighing his rights to stay open as against the rights of a lot of people who are innocent people and may be hurt. The judge makes that decision.

PRESS RELEASES

Mr. JONAS. The chairman offered a suggestion. Who is going to keep dealing with him if you have a press release out that you are going into court to ask for an injunction?

Mr. COHEN. We put out a press release, but it doesn't necessarily mean that the local papers print it, Mr. Jonas. Secondly, even where they print it, we know that these fellows are very often in business because there are a great many people who do not read that section of the paper. So that the press release has its value and it is intended to merely describe very briefly what has happened but that, by itself, very seldom achieves the purpose.

In any event, when we put out a press release in a situation where we go to court, that press release is only put out after we have been to court.

LISTED SECURITIES TRADED IN THE OVER-THE-COUNTER MARKET

Mr. WYMAN. You say that in the past year the Commission and the New York Stock Exchange have adopted rules permitting exchange members to deal over the counter in listed stocks under certain circumstances.

Mr. COHEN. Yes.

Mr. WYMAN. What does that mean?

Mr. COHEN. Well, until this amendment of the rule, the stock exchange forbade any member of the New York Stock Exchange from dealing in securities listed on the New York Stock Exchange in the over-the-counter market. There was a feeling that this prevented New York Stock Exchange members in certain circumstances from, perhaps, executing a transaction at a better price than they could on the stock exchange. The stock exchange amended its rule and that is the basis of the rule. Members are permitted to go off the stock exchange if in fact they can demonstrate that they can effect the transaction on a better basis for the customer. The fact of the matter is that the rule has not been very widely used. I understand that it is coming into its own now, but there is still a good deal of concern expressed about whether or not the rule in its present form is fulfilling its purpose. It is one of the matters that we have under consideration at the moment.

REGISTRATION OF BROKER-DEALERS AND INVESTMENT ADVISERS

Mr. EVINS. Gentlemen, take a look at page 62, registration of broker-dealers and investment advisers and complaint proceedings. The number of broker-dealers registered at the end of the year, 4,250. Then you have a term "terminations." What does that mean?

Mr. COHEN. The man goes out of business or we put him out of business, or he merges or sells out.

Mr. EVINS. Number of investment advisers registered, 1,750. Terminations about 245 in that field. Place this chart into the record.

(Pages 62 and 63 follow:)

4. REGISTRATION OF BROKER-DEALERS AND INVESTMENT ADVISERS AND COMPLAINT PROCESSING

	1967 actual	1968 estimate	1969 estimate
1. Number of broker-dealers registered end of year	4,175	4,200	4,250
2. Application for broker-dealer registration:			
Pending at beginning of year	30	34	34
Filed during year	335	450	450
Subtotal	365	484	484
Processed during year	331	450	450
Pending at end of year	34	34	34
3. Terminations	507	425	400
4. Amendments to registration of broker-dealers:			
Pending at beginning of year	132	239	100
Filed during year	2,656	5,500	2,800
Subtotal	2,788	5,739	2,900
Processed during year	2,549	5,639	2,800
Pending at end of year	239	100	100
5. Number of investment advisers registered	1,732	1,750	1,750
6. Application for registration of investment advisers:			
Pending at beginning of year	26	27	27
Filed during year	327	320	320
Subtotal	353	347	347
Processed during year	326	320	320
Pending at end of year	27	27	27
7. Terminations	218	302	245
8. Amendments to registration of investments advisers:			
Pending at beginning of year	38	77	77
Filed during year	927	2,100	900
Subtotal	965	2,177	977
Processed during year	888	2,100	900
Pending at end of year	77	77	77
9. Correspondence relating to complaints and inquiries	3,195	3,600	4,000
10. Securities violations files:			
Communications received and disposed of	3,869	3,800	3,800
Additional items of information added to files	5,636	5,700	5,700
Number of persons for whom data is now on file	75,614	77,600	77,700
Parole reports received	3	3	3

Division of Corporate Regulation

Mr. Evins. The Division of Corporate Regulation is your third large division of regulation by the Commission. This Division assists the Commission in administering the provisions of the Investment Company Act of 1940, the Public Utility Holding Company Act of 1935 which the Chairman testified to, and certain provisions of the Securities Act of 1933 and the Securities Exchange Act of 1934 with respect to investment companies. It also performs the Commission's function of adviser to the courts under chapters X and XI of the National Bankruptcy Act. How do chapters X and XI differ?

Mr. Cohen. Chapter X is the provision of the National Bankruptcy Act primarily intended for the reorganization of large publicly owned companies. Chapter XI is not limited to large publicly owned companies and is intended principally for the smaller companies. It is really a modern form of arrangement between creditors and debtor. Chapter X is much more elaborate.

Mr. Evins. You are asking for an increase of five jobs in this area. Your workload is shown on 69. Place pages 69–81 into the record.

(The pages follow:)

1. REGISTRATION AND REGULATION OF INVESTMENT COMPANIES

	1967 actual	1968 estimate	1969 estimate
A. Registered investment companies:			
Number at beginning of year	775	842	910
Number of registrations during year	108	125	150
Subtotal	883	967	1,060
Number of registrations terminated during year	41	57	70
Number of registrations end of year	842	910	990
Less inactive companies	99	110	120
Active companies	743	800	870
B. Registration statements and post-effective amendments under the Securities Act of 1933:			
Pending at beginning of year	63	100	100
Filed during year	1,001	1,050	1,150
Total for disposition	1,064	1,150	1,250
Disposed of during year	964	1,050	1,190
Pending at end of year	100	100	60
C. Annual and periodic reports:			
Pending at beginning of year	2,017	1,273	400
Filed during year	5,270	5,500	5,900
Total for disposition	7,287	6,773	6,300
Examined during year	6,014	6,373	6,100
Pending at end of year	1,273	400	200
D. Preliminary proxy statements:			
Pending at beginning of year	30	78	60
Filed during year	489	550	625
Total for disposition	519	628	685
Examined during year	441	568	625
Pending at end of year	78	60	60
E. Applications reviewed for exemption of transactions with affiliates, status matters and other proposals of investment companies:			
Pending at beginning of year	100	115	110
Filed during the year	226	250	255
Subtotal	326	365	365
Applications reviewed during the year	211	255	265
Pending at end of year	115	110	100
F. Administrative proceedings:			
Pending at beginning of year	6	3	3
Instituted during year	12	15	15
Subtotal	18	18	18
Closed during year	15	15	15
Pending at end of year	3	3	3
G. Public and interpretive letters	3,516	3,600	3,700
H. Investment company inspections	156	160	160
I. Investigations relating to serious violations involving possible civil action:			
Pending at beginning of year	44	41	35
Opened during the year	12	15	15
Subtotal	56	56	50
Disposed of during the year	15	21	25
Pending at end of year	41	35	25

For this program, five additional positions (three attorneys and two secretaries) are requested in 1969 to meet the additional workload in the investment company area. Of the five additional positions, one attorney and two secretaries are required for the examination of filings and reports and to expedite the conduct of investigations. The remaining two attorneys are earmarked for the Office of the Chief Counsel, which is the fulcrum for the increasing number of legal interpretations of the Investment Company Act.

Registration and other filings of investment companies.—Of the five positions requested for the Division in 1969, two additional secretarial positions are required. Initial registration of an investment company under the Investment Company Act requires a careful analysis of the company's financial position, a review of its corporate structure and of the literature which it intends to use in selling its shares to the public. Once it has started in business, its investments, selling practices, security issuances, and affiliated relationships mut be closely followed to make certain they comply with the provisions of this intricate statute. On December 31, 1967, there were 890 registered investment companies of which 787 were considered "active companies." This represents an increase of 120 active companies (18 percent) over the number of active companies as of July 1, 1966, and an increase of 170 (27.5 percent) since the end of fiscal 1964 when this aspect of the Division's activities was reorganized. In this connection, the aggregate value as of June 30, 1967, of assets managed by all registered investment companies, was approximately $58.2 billion. This represents an increase of 16 percent in a single year and 41 percent since the end of fiscal 1964.

The function of examination of registration statements filed under the Securities Act and other filings of registered investment companies imposes upon the Division the responsibility for examination for compliance with the accurate and full disclosure standards of the 1933 act. Disclosure is obtained by requiring the registered investment company which proposes to offer its securities to the public to file with the Commission a registration statement, which includes a prospectus, containing significant financial and other information about the issuer and the offering. The prospectus constitutes a part of the registration statement and presents the more important of the required disclosures. The staff is required to review the registration statement and, if it is found deficient, the representatives of the registrant are notified either by an informal letter of comment or through an informal conference of any material respects in which the statement appears to fail to conform with the applicable requirements and is afforded an opportunity to file correcting and clarifying amendments.

The review of a new registration is only the first phase of work involving an investment company for, once a company is effectively registered under the Investment Company Act and its shares registered under the Securities Act, additional and continuing responsibilities are created for the Division. For example, each year the normal open-end investment company can be expected to file at least one posteffective amendment to its Securities Act registration statement, a minimum of three periodic reports (one of which is the comprehensive form N–1R), a proxy statement, dividend and distribution statements and sales materials. Thus, each new registration involves a continuing increase in the workload of the Division.

During the fiscal year 1967, a total of 108 investment companies were registered for the first time. This represented an increase of 30 over the number registered in fiscal 1966. On December 31, 1967, there were a total of 787 active registered investment companies, an increase of approximately 26 percent since November 1964, when the Division first assumed the responsibilities described above. During the period July 1–December 31, 1967, an additional 69 companies registered for the first time.

In addition to the arithmetic increase in registered investment companies, fiscal 1967 witnessed the advent of several totally new concepts in the investment company industry. During 1967, filings were made by a number of "capital leverage" companies, a totally unique type of investment media. This company offers two separate securities each with a distinct investment objective of either growth or income. Because of the unique features of this company, the time required to process its filings is much greater than the conventional mutual fund.

A second type of investment company that recently came to the fore is the "speculative" or "hedge" fund. This company, as the term implies, engages in speculative trading, such as the purchase and sale of securities within short periods of time, the issuance, purchase and sale of "puts" and "calls" and in extensive borrowing of money for leverage purposes. Obviously, a company such as this presents a much geater risk factor both to the investor and in general to the orderly functions of the securities market. For this reason, the activities and practices of speculative companies must be more closely followed than the normal investment company.

Applications for exemption and administrative proceedings.—For 1969, no additional positions are requested for this activity. Under section 6(c) of the act, the Commission, by rules and regulations, upon its own motion or by order upon appli-

cation, may exempt any person, security, or transaction from any provision of the act if and to the extent that such exemption is necessary or appropriate in the public interest and consistent with the protection of investors and the purposes fairly intended by the policy and provisions of the act. Other sections, such as 6(d), 9(b), 10(f), 17(b), 17(d) and 23(c), contain specific provisions and standards pursuant to which the Commission may grant exemptions from particular sections of the act or may approve certain types of transactions. Also, under certain provisions of sections 2, 3, and 8 the Commission may determine the status of persons and companies under the act. One of the principal activities of the Commission in its regulation of investment companies is the consideration of applications for orders under the sections referred to.

The Division has experienced a tremendous increase in the number of applications filed during the past few years. There were 160 applications filed during fiscal 1965 as compared with 226 filed during fiscal 1967. This represents an increase of 41 percent in this workload category.

When applications are received, they are reviewed to determine whether the standards for granting the exemption have been satisfied. If the application is deficient as to the information needed to enable the staff to arrive at a conclusion with respect to the statutory standards, comments are furnished the applicant, either by way of an informal letter or at an informal conference. If the standards appear to be satisfied, the Division prepares a notice of the filing of the application which, if approved by the Commission, is published in the Federal Register and issued as a Commission release. The notice recites that any interested person may request, no later than a stated date, that a hearing be held with respect to the application. If no such request is received, the Division prepares a form of order for Commission issuance as a release. If the Division is of the view that the statutory standards are not satisfied, a notice of a hearing is issued by the Commission which sets forth the matters to be considered at the hearing. The Division appears as a party at the hearing, questions witnesses and sometimes presents evidence of its own. After the hearing, if the Division is not satisfied that the evidence has established that the statutory standards have been satisfied, it will file requests for findings and a brief in support thereof and make an oral argument before the hearing examiner, or the Commission, or both.

The workload in this particular category has been increasing, In fiscal 1967, 12 administrative proceedings were instituted. It is anticipated that 15 proceedings will be instituted in fiscal 1968 as well as in fiscal 1969.

Investment company inspections and investigations.—Of the total of five positions requested for the Division, one attorney position is requested for this activity for the purpose of expediting the conduct of investigations.

The Division's Branch of Investment Company Inspections and Investigations is responsible for the planning, coordination, and overall supervision of the investment company inspection program, which has been found to be of substantial value in protecting the interests of investors. The personnel of the Branch are directly responsible for conducting inspections in certain regional areas because the number of investment companies are few and do not justify permanent assignment to such offices. Moreover, personnel of the Branch engage actively in the conduct of investigations resulting from inspections.

Section 31(b) of the Investment Company Act authorizes the Commission to make periodic and special examinations of every registered investment company. Pursuant to this authority, 156 investment company inspections were completed during fiscal 1967. Many of these inspections disclosed violations not only of the Investment Company Act but also of other statutes administered by the Commission. A number of the violations uncovered were considered serious in nature. These included inadequate arrangements for the safekeeping of investment company assets, failure to disclose true sources of periodic income and capital gain distributions paid to shareholders, inadequate disclosures concerning the activities of the investment company and failure to maintain adequate fidelity bond coverage for those persons dealing with investment company assets. The inspections also disclosed several instances where the procedures for pricing investment company shares did not conform with statutory requirements and with procedures set forth in the company's prospectus. The inspections further uncovered a number of instances in which self-dealing transactions had been effected by affiliated persons in violation of section 17 of the act.

Largely as an outgrowth of the information obtained from these inspections, 12 private investigations were commenced during the last fiscal year to develop facts concerning what appeared to be serious violations of the statutes admin-

istered by the Commission. On the basis of the facts obtained through private investigations, three civil, two criminal, and two administrative actions were instituted by the Commission during fiscal 1967. In one of these civil actions, the Commission obtained a permanent injunction prohibiting the company and its president from operating as an unregistered investment company and from violating the antifraud provisions of the Securities Act of 1933. In another action, the Commission filed suit to rescind the redemption of preferred stock and debentures held by an affiliated corporation of an investment company. In the third civil action, the Commission charged the defendant with gross misconduct and gross abuse of trust and sought an injunction to prohibit further violations of the antifraud provisions of the Securities Act of 1933. Furthermore, the Commission sought an accounting and restitution of funds.

The Commission also instituted two criminal actions as a result of information obtained through its private investigations. In one of the cases, a former sales representative and divisional manager for an investment adviser and underwriter was charged in an 11-count indictment with violations of the anti-embezzlement and larcency provisions of the Investment Company Act and with violations of the Mail Fraud Statute. In the other action, the former president of a registered investment company, was charged in a six-count indictment with misappropriating $69,900 from investment company shareholders through a series of sham transactions. The defendant in that case was also charged as a coconspirator in defrauding the investment company by having it purchase shares of other companies which are now worthless.

In one of the administrative proceedings, which was instituted as a result of an inspection and subsequent investigation, the principal underwriter and investment adviser for two registered investment companies consented to the suspension of its registration and agreed to reimburse the two investment companies for excess costs which the companies suffered as a result of certain portfolio transactions. Approximately $375,700 was returned to the investment companies as a result of the administrative proceeding.

As a result of the Commission's enforcement program under the Investment Company Act, a total of approximately $3,877,664 was returned to investors either directly or indirectly during fiscal years 1963 through 1967.

At the present time the entire Office of Enforcement consists of two supervisory, six professional and three steno-clerical personnel. It is increasingly apparent that this office is required to spend more time in pursuing investigations because the problems previously encountered have given way to the more subtle and sophisticated problems which require much more expertise and research. For 1968, the office will endeavor to discharge its responsibilities with its present limited staff.

Interpretations.—For this activity, two additional attorney positions are requested in fiscal 1969 for the office of the chief counsel of the division. The personnel of that office is continuously and heavily engaged in interpretative matters which are not reflected in any statistics. The division is requested to give its informal views as to whether a new type of financial relationship would create an investment company and, if so, whether it complies with the regulatory requirements of the act. Again, the division is called upon to express an opinion as to whether a company, falling within the broad definition of an investment company, is excluded from the definition by reason of satisfying the standards of section 3(c) of the act.

Further, the division is constantly requested to give its interpretation as to whether a proposed activity of an investment company, or of its affiliated persons, complies with the requirements of the rules and regulations promulgated under the act, and is required to analyze and report on suggestions for modification of existing rules or for promulgation of new rules. The division is also extensively engaged in searching out those companies which are investment companies which should be registered under the act. In addition, the division works in close cooperation with the National Association of Securities Dealers with respect to the selling practices of investment companies and their underwriters. As a result, the division is frequently requested by that association by telephone and in regularly held conferences to express its views of the appropriateness of proposed action to be taken by that association.

When the work of the division results in a court proceeding, by way of either a review of a Commission order or the initiation of an injunctive action or a criminal proceeding, the personnel of the division assist the office of the general counsel in the proceeding. In addition, personnel of the division assist the office of the general counsel in connection with the presentation of the Commission's views respecting legislative proposals or congressional inquiries concerning matters respecting investment companies and related items.

2. REORGANIZATION PROCEEDINGS

	1967 actual	1968 estimate	1969 estimate
A. Review of reorganization petitions filed in courts	113	130	140
B. Reorganization proceedings in which the Commission participated during the fiscal year:			
Pending at beginning of year	88	87	87
Notices of appearances filed in courts during year	16	16	16
Subtotal	104	103	103
Proceedings closed during year	17	16	16
Pending at end of year	87	87	87
C. Public and interpretive letters	258	300	350
D. Memorandums, documents, reports received or filed in court	10,167	11,000	12,000

For this program, the Branch of Reorganization requires no additional positions in 1969.

In carrying out activities pertaining to chapters X and XI of the Bankruptcy Act, the branch, in collaboration with the regional offices, assists the Commission in deciding upon the position which it will take as a party in all aspects of reorganization cases in which it participates. The branch initially reviews all new chapter X and XI proceedings filed in the Federal courts and, with the advice and assistance of the regional offices, makes recommendations to the Commission as to whether it should actively participate in the cases or follow the proceedings closely as "active watch" in order to determine whether at some later date the Commission should participate.

The branch performs the original work on all chapter X and XI cases arising in the Atlanta and Washington, D.C., regional offices since the workload in these areas has fluctuated too greatly in the past to justify permanent field assignments.

The branch reviews drafts of advisory reports and recommendations prepared by the other regional offices in respect to cases arising in those areas, and presents the final recommendations in such matters to the Commission.

The original work performed by the field offices and the branch encompasses the following: (1) examine and analyze the records of the company; (2) obtain information from the former management and other personnel associated with the debtor; (3) examine numerous legal documents filed with the Federal court; (4) analyze and determine the merits of the action proposed to be taken by the trustee and other interested parties; (5) prepare for the examination of witnesses at hearings before the court and in presenting oral argument to the court; (6) assist the trustees in providing information to the creditors and stockholders; (7) prepare an advisory report or recommendation to the court as to the fairness, equitableness and feasibility of the plan of reorganization; and (8) prepare recommendations to the court as to the proper amount of compensation to be paid to the participants.

CONGRESSIONAL HEARINGS PERTAINING TO MUTUAL FUND LEGISLATION

Mr. EVINS. Are there any questions, Mr. Minshall?

Mr. MINSHALL. Mr. Chairman, I regret that my duties on the Defense Subcommittee prevented me from being here right after lunch. I understand that the question of mutual funds was discussed.

Mr. Cohen, I understand that you are having hearings starting next Tuesday.

Mr. COHEN. They are resuming next Tuesday, I believe.

Mr. MINSHALL. How long have the hearings been in progress?

Mr. COHEN. Hearings were held on two different occasions in the Senate, in October in the House, and they are resuming next week in the House.

Mr. MINSHALL. I appreciate that certain matters are in the hearing stage now, and more or less in litigation, but the area I am interested in is the one that has been given so much discussion in the public press, that is, about the mutual funds practically controlling the market.

Mr. COHEN. The hearings next week, so far as I know, are not concerned with that factor but we did discuss that today. I indicated that there is a resolution, a joint resolution introduced in the House by Mr. Moss and Mr. Keith, which would authorize the Commission to conduct a study of the growing institutionalization of the securities markets. That may or may not be the subject of discussion next week. I am going to see Mr. Moss about it soon. Now, there is that resolution, but no hearings have been held on it. The Commission feels that this is an area that should receive attention and that the attention required is a comprehensive study of the activities of all of the institutions.

Mr. MINSHALL. You feel it is of serious enough proportion, then, to require immediate study and perhaps some action?

Mr. COHEN. Immediately study. The nature of the action I am not too sure of it, but study, yes, indeed; I do feel it is very urgent.

Mr. MINSHALL. How much study do you anticipate?

Mr. COHEN. Do you mean——

Mr. MINSHALL. I have been through these Government studies before. Sometimes they go on for decades.

Mr. COHEN. No. I have in mind a study that will take about a year concerning what the insurance companies, the banks, the pension funds and mutual funds are doing, what the foundations are doing—in other words, the large institutional investors.

Mr. MINSHALL. In other words, you will hopefully complete your study in about a year and come up with some kind of a finding as a result of that study?

Mr. COHEN. Yes, sir.

Mr. MINSHALL. In about a year?

Mr. COHEN. Yes, sir.

Mr. MINSHALL. Thank you very much.

Mr. COHEN. As a matter of fact, we hope to enlist the cooperation and support of all of the industry groups involved so that we can expedite it.

REGULATION OF PUBLIC UTILITY HOLDING COMPANIES

Mr. EVINS. Gentlemen, let's take a look at your regulation of public utility holding companies. Place in the record pages 82 to 85.

(The pages follow:)

3. REGULATION OF PUBLIC UTILITY HOLDING COMPANY SYSTEM

	1967 actual	1968 estimate	1969 estimate
Number of applications relating to approval of exemptions, financing transactions, acquisitions of securities or other assets, intercompany loans, dividends, contributions, etc.:			
Pending at beginning of year	36	35	35
Filed during year	121	150	155
Subtotal	157	185	190
Applications reviewed during year	122	150	155
Pending at end of year	35	35	35
Administrative proceedings	9	12	15
Examination of periodic reports	766	766	810
Proxies reviewed for violations	9	55	55
Public and interpretive letters	186	205	225

For this program, no additional positions are requested for fiscal 1969.

The branch of public utility regulation administers and enforces matters arising under the 1935 act which concerns the regulation of interstate public utility holding company systems engaged in the electric utility business or in the retail distribution of gas. The act, in many respects, is keyed to the standards of its section 11, which requires the geographic integration and corporate simplification of companies comprising holding company systems. These standards involve complex and interrelated questions of law, engineering and finance.

The work of the branch consists, among other things, of the processing of applications, declarations, informal proposals, and supervisory reports relating to a broad range of proposed corporate and financial transactions of 27 registered holding company systems, of which 18, having assets, less valuation reserves, of $17 billion as of June 30, 1967, are active and will be subject to the jurisdiction of the Commission under the act in fiscal 1969. A total of 216 separate companies are within these systems, of which 18 are solely holding companies, four are combined holding-operating companies, 89 are electric and/or gas utility subsidiaries, 67 are nonutility subsidiaries, and 38 are inactive companies. During fiscal 1967, a total of 121 applications for approval of various proposed transactions were filed with the Commission. Of this number, 12 applications pertained to requests by registered holding company systems and their subsidiaries to sell to the public 31 issues of long-term debt and capital stock totaling $659 million to finance plant and equipment expenditures.

In addition, the branch is required to maintain continuing surveillance over 225 holding companies which have been exempted from the act, by compliance with a rule or by order, to make certain that the circumstances which gave rise to the exemption have not changed.

The activities in this area have become acute not only because of the wholly unanticipated increase in the number of applications filed during fiscal 1967 and which increase will probably continue indefinitely, but also because of the time-consuming nature of certain pending and anticipated proposals, and the necessity for a beginning effort to dispose of certain long-standing problems discussed below.

In addition to the aforementioned workload, several additional matters were recently filed, in which public hearings are, or shortly will be, in progress in one or more of their aspects. Definitive resolution of certain of these problems is expected to carry over into fiscal 1969. A number of plans have been filed under section 11(e) of the act, and there have been a number of proposed acquisitions of stock through tender offers. Each of them raises important and difficult problems under the standards of section 11 and other germane sections of the act. In addition, the tender offers, if approved and consummated will require the filing of additional section 11(e) plans so as to bring the system into compliance with the standards of section 11(b) of the act.

It is also expected that sometime during fiscal 1969 there will have been completed several proposals for the corporate affiliation of various public utility companies not now affiliated and not now subject to the act. These affiliations will most likely be effected by the creation of new holding company systems that would be subject to regulation under the act. A number of plans are also being

considered for the joint ownership and operation of atomic energy and pumped storage generating facilities by subsidiary companies of presently registered holding companies and nonaffiliated companies. Each of such proposals will subject additional companies to continuing regulation of their corporate and financial transactions, and pose, in addition, section 11 problems.

In addition to the above proposals which will subject new holding company systems to the jurisdiction of the Commission, there are at least five holding company systems with important unresolved problems under section 11. A recent Supreme Court decision affirming the Commission's interpretation of section 11 makes appropriate a beginning effort for the disposition of this backlog. Such an effort is, as a practical matter, an impossibility with existing staff personnel.

4. REGULATION OF SERVICE COMPANIES

For this activity, the Office of Financial Data requests no additional personnel for 1969.

The Office of Financial Data of the Division performs statistical and research support work in connection with the administration of the Investment Company Act of 1940, the requirements for which are included in the tabulation on pages 4 and 5. It also administers section 13 of the Public Utility Holding Company Act of 1935 which regulates all servicing arrangements in registered holding-company systems and the activities of certain independent service companies. There are system service companies in nine of the registered systems and they render extensive managerial and technical services at cost to associated companies. The workload of the Office in respect of this activity consists principally of the processing of their applications, declarations, informal proposals and supervisory reports, periodic surveys of the organization and operations of the system service companies and reviewing the classifications of their accounts. The nine system service companies currently bill associate companies approximately $73.6 million a year for services rendered. The Commission's jurisdiction over service companies is exclusive.

WORK UNDER THE PUBLIC UTILITY HOLDING COMPANY SYSTEMS

Mr. EVINS. You state here that the work of this branch consists of the processing of applications, declarations, informal proposals, and supervisory reports relating to a broad range of proposed corporate and financial transactions of 27 registered holding company systems, of which 18, having assets, less valuation reserves, of $17 billion as of June 30, 1967, are active. Tell us about the technique of regulating a holding company.

Mr. COHEN. Well, let me call on Mr. Freedman here.

Mr. FREEDMAN. A holding company is a company that owns, generally speaking, 10 percent or more of the voting securities of a public utility company which, in turn, is defined in the act as an electric company or a retail gas distribution company.

Mr. EVINS. Ten percent of an electric company or a retail gas distribution company?

Mr. FREEDMAN. Any company that holds 10 percent or more of the voting securities of either of those.

Mr. EVINS. Any company that holds 10 percent or more of the voting stock of an electric utility or a gas company is a holding company?

Mr. FREEDMAN. Yes, sir.

Mr. EVINS. Is that as defined by the statute?

Mr. FREEDMAN. Yes.

Mr. EVINS. Is it confined to those?

Mr. FREEDMAN. Yes, those two, as subsidiary companies. The top company is a holding company.

Mr. EVINS. All right. Tell us how you regulate them. How do you stand up against those giants?

Mr. FREEDMAN. The holding company has to register as a holding company.

Mr. EVINS. What do you do then?

Mr. FREEDMAN. Any proposed transaction that the holding company wants to enter into with any of the subsidiaries, or practically any transaction by any company in the holding company system is reviewed by the Commission; that is, the issuance of securities or entering into the transaction for the purchase or sale of securities or the purchase or sale of assets, or the entering into any business. In those situations, an application has to be filed. The Commission looks at it. Under the standards of the act it makes a determination as to whether or not the transaction is in the public interest, in the interest of the investors and consumers. There is another big area and that is the reorganization process. If, in any holding company system the voting power is unfairly or inequitably distributed among the holders of the securities of that system, the Commission, by direction of the Congress, is required to enter an order requiring the elimination of that inequitable voting power. Then there is another provision, section 11(b)(1), which requires the Commission to institute proceedings to the end that each holding company system will consist solely of a single integrated public utility system, which is a defined term, and such other businesses and additional systems that meet the standards that have been set forth in section 11(b)(1) of the act.

ENFORCEMENT OF THE PROVISIONS OF THE 1935 ACT

Mr. EVINS. You know the sections of the act and you know the regulations of the Commission. What results have you had in the enforcement of the holding companies?

Mr. COHEN. Might I interrupt to give you a nontechnical answer?

Mr. EVINS. I think he knows this subject, Mr. Chairman.

Mr. COHEN. He certainly does.

Mr. EVINS. You need wise and experienced people. It is not a place for novices.

Mr. COHEN. This statute was passed initially by the Congress to break up the holding companies built up by Mr. Insull and other people.

Mr. EVINS. It came after he got on his yacht and left the country.

Mr. COHEN. Exactly. That work has largely been achieved, but the Commission has continuing responsibility in the area of acquisitions and other transactions by subsidiary companies and by the public utility holding companies.

In recent years there has been a development which seems to be a change in trend. There has been a tendency toward merger and acquisitions whereby some of these public utility holding companies are becoming fairly large.

Mr. EVINS. Are the holding companies merging?

Mr. COHEN. Yes, some holding companies have merged. Usually the holding company acquires another utility company and may merge it into an existing one or keep it as a subsidiary. At any rate, the complex becomes larger.

I think it is due to two things, and probably some more. One has been the growing fever toward mergers in our country, and the growing tendency toward bigness.

Another aspect of it is the growing feeling that there should be better interconnections between various utility companies despite the problems that interconnections have provided for us in the last couple of years. As a result of both of the situations we are now faced with really an unexpected increase of activity in this area. We are not asking for any more people. We do not know whether this will continue, but all indications are that it will. I think it is one area to which the Congress in the first instance, because this is the Congress, creation, and the Commission can point with pride.

We really did reorganize these grotesque situations as a result of which many local utility companies were freed of absentee ownership, although, as I say, that is beginning to turn around in some aspects.

But, more important, it made possible the coming to the top of the real values in the underlying companies. I think this is generally conceded.

There are many people who become millionaires because they were good analysts and watched the reorganization coming along and bought the right securities. The Commission activity in this area is fairly limited right now.

Offices of the Comptroller and Personnel

Mr. Evins. Turn to the Office of Comptroller on page 87.

No new jobs are asked there.

And then the Office of Personnel. No increases there.

Regional Offices

Mr. Evins. We will take a look at your regional offices. We have had two fine representatives here of your regional offices. We will place page 95 in the record.

(The page follows:)

Functional Statement

The regional offices are the field representatives of the Commission in the administration and enforcement of the various acts.

The principal functions of the regional offices include the following: (1) Examination of the books, records, and practices of registered brokers and dealers and members of national securities exchanges, and the examination of their annual financial reports; (2) investigation of (*a*) transactions in securities on national securities exchanges, in the over-the-counter market, and in distributions to the public, and (*b*) complaints from investors and others; (3) examination and processing of filings under regulation A; (4) recommendation of administrative, civil or criminal sanctions where violations have been established; (5) prosecution of injunctive actions in U.S. district courts and administrative proceedings before hearing examiners; (6) rendering of assistance to U.S. attorneys in criminal cases; (7) participation in proceedings in U.S. district courts under chapters X and XI of the Bankruptcy Act; (8) examination of the accounts and records of registered investment companies; (9) rendering interpretative advice and assistance to registrants, registered brokers and dealers, prospective registrants, the investing public and others as to the application and meaning of the various statutes and the Commission's rules, regulations and forms; (10) examination of the books, records and practices of registered investment advisers; and (11) inspection of non-NASD members.

Mr. EVINS. You have nine regional offices: New York, Boston, Atlanta, Chicago, Fort Worth, Denver, San Francisco, Seattle, and Washington, D.C., with total positions of 537. Most activities are in New York, I suppose.

Mr. COHEN. The New York office is our second largest unit in the Commission. The only larger unit is our Division of Corporation Finance.

Mr. EVINS. And here is some of your investigations on 99.

JUSTIFICATION MATERIAL

Insert pages 99 through 102.
(The pages follow:)

3. INVESTIGATIONS AND ENFORCEMENT

	1967 actual	1968 estimate	1969 estimate
1. Investigations including administrative, civil, and criminal proceedings:			
Pending at beginning of year	772	789	789
Opened during the year	390	390	395
Subtotal	1,162	1,179	1,184
Closed during the year	373	390	395
Pending at end of year	789	789	789
(a) Broker-dealer proceedings:			
Pending at beginning of year	86	67	50
Opened during the year	33	35	45
Subtotal	119	102	95
Closed during the year	52	52	52
Pending at end of year	67	50	43
(b) Investment adviser proceedings:			
Pending at beginning of year	8	6	5
Opened during the year	3	5	7
Subtotal	11	11	12
Closed during the year	5	6	7
Pending at end of year	6	5	5
(c) Injunction actions:			
Pending at beginning of year	80	86	86
Filed during the year	71	71	75
Subtotal	151	157	161
Disposed of during the year	65	71	75
Pending at end of year	86	86	86
(d) Criminal reference reports referred to the Department of Justice:			
Pending at beginning of year	124	113	105
Referred during the year	46	46	50
Subtotal	170	159	155
Disposed of during the year	57	54	55
Pending at end of year	113	105	100

For 1969, no additional positions are requested for this activity.

The majority of investigations emanate from: (1) Complaints by the investing public; (2) the Commission's broker-dealer inspection program; (3) suspected fraud and malpractices in the solicitation, sale, and trading of securities; (4) surveillance of the securities markets; and (5) requests for field office assistance by the central office in connection with all aspects of the Commission's work. Other sources of information which are of great assistance to the Commission in carrying out its enforcement responsibilities are the national securities exchanges, brokerage firms, State and Canadian securities authorities, better business bureaus, the National Association of Securities Dealers, Inc., and various law enforcement agencies.

If any inquiry discloses that no violation has been committed or that a violation has occurred due to a misunderstanding or ignorance of the law, no further action is generally taken except that under the latter circumstances, the offender is informed of the violation and appropriate administrative measures are taken to procure immediate compliance and to prevent recurrence of violations.

If the matter cannot be disposed of satisfactorily after the inquiry, the Commission may utilize its power to issue subpenas requiring the appearance of witnesses to testify under oath and the furnishing of documents. Upon completion of such investigation, the regional office submits a recommendation that appropriate action be instituted by the Commission or that the investigation be closed. These reports are reviewed by the central office prior to presentation to the Commission for disposition. If it appears that criminal prosecution would be appropriate, the action of the Commission may take the form of a reference of the evidence to the Attorney General. In other cases, the Commission may authorize institution of a civil proceeding for injunctive relief or administrative proceedings against broker-dealers and investment advisers. The fraudulent sale of securities still remains a major problem for the Commission.

The Commission has been compelled to carry on a vigorous, firm and aggressive enforcement program designed to afford protection to the investing public. It is our experience that our work becomes more and more intricate as the violators are forced to exercise greater ingenuity in order to avoid the impact of our investigations and proceedings.

The criminal workload has increased substantially in the past few years. Such criminal work is far more demanding in both extent and depth than is required in most civil and administrative proceedings. Experience has shown the Commission that effective enforcement demands recourse not only to the latter remedies, but to criminal action as well if full effectiveness is to be achieved in halting the illegal activities of those violators who demonstrate an utter disregard for the law. As an illustration of this point, the Commission has referred 450 cases to the Department of Justice for the past 10 fiscal years (1958–67) as compared with 192 cases for the previous 10 years (1948–57).

Another important factor to note in connection with criminal references to the Department of Justice is that the number of charges, and of defendants and coconspirators in the past year has increased significantly. For example, during the 10-year period ending June 30, 1967, the Commission recommended prosecution of approximately 1,810 defendants as compared with 435 defendants for the 10-year period ending June 30, 1957. Unquestionably, the current prosecutions are far more complex and difficult than those which the Commission faced in the past. In a number of recent cases, it has been necessary to return multiple indictments against numerous major defendants and coconspirators.

Emphasis upon developing criminal cases necessarily means that the Commission is utilizing its personnel for this purpose who would otherwise be available to devote their full attention to other urgent enforcement and regulatory problems. In 1967, the Commission incurred manpower and travel costs of approximately $650,000 as compared with $600,000 in 1966 in assisting U.S. attorneys in the grand jury action and prosecution of criminal cases.

4. INTERPRETATION AND INFORMATION

Interpretation and opinions under all acts administered by the Commission, except the Public Utility Holding Company Act of 1935, Investment Company Act of 1940, and chapter X of the Bankruptcy Act are rendered by the interpretative attorneys in the regional offices to the public and to members of the staff of the regional offices. In addition, they render interpretations and opinions of rules and regulations adopted by the Commission (including questions of general interpretations under regulation A) and practices and procedures followed in the administration of these statutes. Inquiries requesting such interpretations, both formal and informal, are received from prospective registrants, registered brokers and dealers, and the investing public.

BENEFITS TO FORMER EMPLOYEES

Mr. EVINS. I notice your other objects on page 108. The personnel benefits are up, benefits to former employees are up. How does that come in the picture?

Mr. DONATY. This is a fund established by the Department of Labor in which they pay the costs of doctors' and medical bills of former employees that were hurt while on duty. Workmen's compensation.

Mr. EVINS. In cases of former employees?

Mr. DONATY. Yes.

Mr. EVINS. They bill you and you reimburse them?

Mr. DONATY. Yes.

TRAVEL AND EQUIPMENT

Mr. EVINS. Travel increases.

You have a substantial decrease in your equipment. This is because you purchased your computer last year. It goes down from $438,700 to $31,700. What is the $31,700 for?

Mr. DONATY. That is primarily for office equipment for new people, replacement of multilith press and purchase of some magnetic tape.

SUMMARY OF OTHER EXPENSES

Mr. EVINS. We will place in the record pages 108, 109, and 111.

(The pages follow:)

SUMMARY—OTHER EXPENSES

The sum of $2,748,000 is required in 1969 for costs other than salaries. These costs are itemized in the following tables:

Item	1967 actual	1968 estimate	1969 estimate
Personnel benefits	$1,031,917	$1,066,200	$1,108,100
Benefits to former employees	10,921	4,350	11,500
Travel and transportation of persons	474,105	492,300	507,300
Transportation of things	9,309	10,600	10,600
Communications and rental	655,855	594,100	554,000
Printing and reproduction	84,752	65,950	66,000
Other services	332,746	319,000	325,000
Supplies and materials	171,843	133,800	133,800
Equipment	140,750	438,700	31,700
Total	[1] 2,912,198	3,125,000	2,748,000

[1] Excludes $820,461 transferred to the GSA for rental of commercial space.

The overall decrease of $377,000 for expenses other than personal services in 1969 represents primarily the following items:

1. A decrease of $71,000 for rental of the computer and auxiliary equipment.
2. A decrease of $425,000 which represents the purchase price of the computer and auxiliary equipment.
3. An increase of $41,900 representing the cost of mandatory contributions by the Commission due primarily to the pay increase.
4. An increase of $40,200 representing the following items: (*a*) $7,150 for benefits to former employes; (*b*) $15,000 for travel; (*c*) $18,000 for equipment; and (*d*) an increase of $50 in printing and reproduction.
5. An increase of $12,900 for the Federal telecommunications system and teletype service which is reimbursable to the GSA.
6. An increase of $18,000 for penalty mail which is reimbursable to the Post Office Department.
7. An increase of $6,000 in equipment maintenance.

PERSONNEL BENEFITS

The sum of $1,108,100 is required for the benefits described in the following table. These benefits are statutory and the cost reflects the Commission's pro rata share for all items with the exception of the awards to employees, allowances for notaries public, uniforms, and certain expenses incident to the transfer of personnel.

	1967 actual	1968 estimate	1969 estimate
Life insurance contributions	$39,320	$44,200	$49,000
Contributions to civil service retirement fund	856,386	887,775	920,675
Awards to employees	11,371	6,000	6,000
Social security taxes	13,367	13,400	13,900
Health benefits contributions	93,736	93,800	97,500
Allowances for notaries public	35	100	100
Allowances for uniforms	84	125	125
Subsistence and temporary expenses	1,243	1,500	1,500
Real estate costs	15,362	18,000	18,000
Miscellaneous moving expenses	1,013	1,300	1,300
Total	1,031,917	1,066,200	1,108,100

The increase of $41,900 represents the cost of mandatory contributions by the Commission primarily due to: (1) the recent pay increase; and (2) the additional personnel requested in fiscal 1969.

TRAVEL AND TRANSPORTATION OF PERSONS

The amount of $507,300 is required for travel expenses for 1969. This amount will provide for the payment of transportation expenses, rental of automobiles, subsistence, incidental expenses and mileage for the use of privately owned automobiles for official travel of employees. The total amount includes also provision for the cost of family travel expenses on change of duty station and compensation for witnesses. An itemization of these costs is shown in the following table:

Item	1967 actual	1968 estimate	1969 estimate
Transportation of persons	$184,780	$191,500	$198,200
Commercial rental of automobiles	2,571	2,700	2,700
Subsistence expenses	211,350	219,300	223,300
Incidental expenses	7,133	7,500	8,500
Mileage, use of private auto	28,200	29,300	29,300
Government motor pool rentals, cars	20,508	21,300	22,300
Family travel expenses	616	700	1,000
Compensation of witnesses	18,947	20,000	22,000
Total	474,105	492,300	507,300

For fiscal 1969, the additional amount of $15,000 is required for two purposes: (1) to assist U.S. attorneys in the grand jury action of criminal cases and prosecution of such cases; and (2) to permit our hearing examiners to conduct an increased number of administrative proceedings. In the past few years, the amount of travel funds used for these items has increased substantially because of the increased number of protracted trials and administrative proceedings. In fiscal 1967, approximately $40,000 in travel funds was used to assist U.S. attorneys.

COMMUNICATIONS AND RENTAL

Mr. EVINS. Communications and rental are pretty high, Mr. Chairman.

Mr. COHEN. They are down a little bit.

Mr. EVINS. $554,000.

Mr. COHEN. That is right. We estimate this year 594 and in 1967 it was 655. We are trying to keep a close tab on it, but it is high, I agree with you.

PRINTING AND REPRODUCTION

Mr. EVINS. We will place in the record page 114.

(The page follows:)

PRINTING AND REPRODUCTION

The following table shows the actual costs for 1967 and estimated cost for 1968 and 1969 for the several items of printing:

Item	1967 actual	1968 estimate	1969 estimate
1. Reprints of rules and amendments, technical forms, etc.	$20,225	$27,000	$27,000
2. Legal briefs, transcript of record, etc.	9,022	3,000	3,000
3. The Commission's annual report to Congress	4,437	4,500	4,500
4. Administrative forms, letterheads, envelopes, standard forms, printed supplies, etc.	14,706	8,000	8,000
5. Official Summary of Security Transactions and Holdings and Statistical Bulletins (published monthly)	7,966	8,000	8,000
6. Photo duplication, binding, and reproduction	15,327	7,450	7,500
7. Copies of public bills, documents, etc.	3,011	3,000	3,000
8. Marginally punched forms, custom and stock forms	10,058	5,000	5,000
Total	84,752	65,950	66,000

The printing of the above items are performed by the Government Printing Office.

SCHEDULE OF FEES COLLECTED

Mr. JONAS. I was interested in your statement that you collect $11.8 million in fees. Can you give us a schedule of those? Would it be long and detailed?

Tell us in general what you get that money from.

Mr. COHEN. I think we have it on page 119, Mr. Jonas, spelled out in detail.

(The page follows:)

STATEMENT OF ACTUAL 1967 FEES AND ESTIMATED FEES FOR 1968 AND 1969

The fees collected by the Commission in the fiscal year 1967 and the estimated fees for fiscal 1968 and 1969 are as follows:

Character of fees	1967 actual	1968 estimate	1969 estimate
Registration of securities under the Securities Act of 1933	$6,706,396	$8,070,000	$8,150,000
From stock exchanges under sec. 31 of the Securities Exchange Act of 1934	2,558,276	3,380,000	3,380,000
Non-NASD brokers and dealers	[1] 500,400	280,000	300,000
Qualification of trust indentures	1,200	2,000	2,000
Other fees	795	1,000	1,000
Total	9,767,067	11,733,000	11,833,000

[1] Includes $231,700 which is applicable to fiscal 1966.

SOURCES OF FEES COLLECTED

Mr. COHEN. Actually, it comes from two principal sources.

One, the fee which is levied in connection with the sale of new issues to the public. And that is about $8 million.

Mr. JONAS. An existing company wants to issue some debentures.

Mr. COHEN. It must pay a fee.

Mr. JONAS. That is based on the amount?

Mr. COHEN. Yes.

Mr. JONAS. What percent?

Mr. COHEN. 20 cents on $1,000.

Mr. JONAS. How much on a million?

Mr. COHEN. It would be a thousand times 20 cents, so it would be $200.

Mr. JONAS. That is one source.

Mr. COHEN. The other principal source——

Mr. JONAS. That brings in quite a lot of money.

Mr. COHEN. It brings in $8 million. That is right.

Actually, it pays for more than the cost of doing that job. But, as we have explored this with this committee before, we felt this was a justifiable way of doing it because it is for the benefit of the general market and the public. And it was a statutory amendment which made it possible.

The other source is a fee based upon the volume of stock exchange transactions.

Mr. JONAS. That is paid by the exchange?

Mr. COHEN. Yes, sir. The exchange, of course, collects it from the broker, he collects it from the customer who pays for it ultimately; but it comes to us. And we estimate that in 1969 it will be $3.3 milion approximately. From the non-NASD members we have been collecting some fees. That is a self-sustaining program. We make some minor amounts from some other sources. In the aggregate it is $11.8 million we estimate for 1969. It has been $11.7 million for this year, we expect.

Mr. JONAS. Thank you.

EFFECT OF PUBLIC LAW 90–218

Mr. EVINS. Give us an estimate of the effect of Public Law 90–218 on the operation of your Commission. The 2- to 10-percent cutback. How did it affect you last year?

Mr. DONATY. The impact of House Joint Resolution 888.

Mr. EVINS. Public Law 90–218.

Mr. DONATY. Affected the Commission to the total amount of $425,000.

Mr. EVINS. You had to hold that amount in reserve?

Mr. DONATY. That is right.

Mr. COHEN. I think I explained it earlier. The President under his authority through the Budget Bureau, because of the computer purchase problem, released $300,000 on the promise and condition that we would make up the $125,000 by lapse in employment. And that is what we are doing.

Mr. EVINS. You want $17,903,000 and 25 additional positions. The total net increase in appropriations is $669,000.

Mr. COHEN. That is right; yes, sir.

Mr. EVINS. I think we understand your situation.

Mr. Commissioner Budge, do you have anything to say?

Mr. BUDGE. I would like to go off the record.

(Off the record.)

Mr. EVINS. Gentlemen. you have a very important Commission. This is a time of inflation and high activity in the market. You have a large workload and we commend you on your great work.

Mr. COHEN. Thank you very much, sir.

MONDAY, MARCH 11, 1968.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WITNESSES

JAMES E. WEBB, ADMINISTRATOR
WILLIS H. SHAPLEY, ASSOCIATE DEPUTY ADMINISTRATOR
DR. MAC C. ADAMS, ASSOCIATE ADMINISTRATOR FOR ADVANCED RESEARCH AND TECHNOLOGY
BOYD MYERS, DEPUTY ASSOCIATE ADMINISTRATOR FOR ADVANCED RESEARCH AND TECHNOLOGY (OPERATIONS)
ROBERT F. ALLNUTT, ASSISTANT ADMINISTRATOR FOR LEGISLATIVE AFFAIRS
PAUL G. DEMBLING, GENERAL COUNSEL
HAROLD B. FINGER, ASSOCIATE ADMINISTRATOR FOR ORGANIZATION AND MANAGEMENT
WILLIAM E. LILLY, ASSISTANT ADMINISTRATOR FOR ADMINISTRATION
DR. GEORGE E. MUELLER, ASSOCIATE ADMINISTRATOR FOR MANNED SPACE FLIGHT
DR. JOHN E. NAUGLE, ASSOCIATE ADMINISTRATOR FOR SPACE SCIENCE AND APPLICATIONS
JULIAN SCHEER, ASSISTANT ADMINISTRATOR FOR PUBLIC AFFAIRS
GERALD M. TRUSZYNSKI, ASSOCIATE ADMINISTRATOR FOR TRACKING AND DATA ACQUISITION
DR. WERNHER VON BRAUN, DIRECTOR, GEORGE C. MARSHALL SPACE FLIGHT CENTER
CHARLES W. MATHEWS, DIRECTOR FOR APOLLO APPLICATIONS PROGRAM

Mr. EVINS. The committee will come to order. We have with us this morning our friends from the National Aeronautics and Space Administration, headed by the able and competent Administrator, Mr. James E. Webb.

I understand, Mr. Administrator, you have a new Deputy but he is not here this morning.

Mr. WEBB. No, sir; he reports the morning of the 25th of this month. Having a very responsible job in industry in California, he had to make the proper arrangements to keep that in good order. He will report for duty on March 25.

Mr. EVINS. We will be happy to meet him when he comes aboard.

This is a very distinguished team, Mr. Webb. We are proud of your accomplishments.

Mr. Administrator, we always listen to you with interest and appreciation and we will be pleased to hear your statement.

GENERAL STATEMENT

Mr. WEBB. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, we are here today to present to the subcommittee the President's appropriation request

for NASA for fiscal year 1969, a year that marks the beginning of NASA's second decade.

For the past 7 years, Dr. Robert C. Seamans, Jr., first as Associate Administrator and then as Deputy Administrator, has played a principal role in presenting the NASA program to the subcommittee. All of us at NASA deeply regret the loss of his services as a full-time official, but we are glad that he has agreed to continue on a part-time basis as a consultant.

The President has nominated Dr. Thomas O. Paine, of Santa Barbara, Calif., to succeed Dr. Seamans and the Senate has confirmed him. Dr. Paine has achieved a distinguished record in many technical fields including metallurgy and magnetism. Equally important, he is experienced in the field of management.

His most recent post was as manager of General Electric's center for advanced studies. Here he was responsible for a substantial effort in research and analytic studies on complex problems of military systems and on broad technological and social problems of a national and international character. Thus NASA is able to draw on an outstanding technically and scientifically oriented executive from private life to enrich the higher competence of its career service. Dr. Paine will report for duty this month.

Dr. Homer Newell, as Associate Administrator, is concentrating on a number of special assignments centering on an analysis of policy and planning needs for the next 10 years. Since the position of Deputy Administrator is temporarily vacant, and in view of Dr. Newell's current assignment, I have asked the Associate Administrators for Space Science and Applications, for Tracking and Data Acquisition, for Advanced Research and Technology, and for Manned Space Flight to present NASA's 1969 budget requests. They will testify not solely as the managers of the four major program offices, but as officials responsible for and participating in the conduct of the total NASA program including the areas of overall management and public policy.

With your permission, my statement today will be limited to a few of the most important points, and additional material will be supplied for the record as necessary. Our requests will be developed further by the Associate Administrators and others to the extent desired by the subcommittee.

BUDGET ESTIMATE DOWN $700 MILLION

NASA's authorization request in support of the President's fiscal year 1969 budget is now in the final markup stage in the House Committee on Science and Astronautics. The budget estimate totals $4,370.4 million. This is $700 million below the amount requested last year and almost $500 million less than the amount authorized. It is $200 million below the amount appropriated last year. Under the President's recommendation, NASA's expenditures for fiscal year 1969 will be down $230 million from fiscal year 1968, $850 million below fiscal year 1967, and $1.3 billion less than in fiscal year 1966. The NASA program has been cut. I hope you will decide it has been cut enough and will approve the full amount that results from the authorization legislation.

The fiscal year 1969 budget request does not meet all our Nation's needs in aeronautics and space. It is a compromise—one which I fully

support—between needed work toward advances in aeronautics and space which we can and should make, and other overriding requirements. The President was forced, in spite of his conviction as to the importance of a larger effort in aeronautics and space research, to accept reductions in NASA's budget as submitted for fiscal year 1968 and to recommend in this 1969 budget an even lower level.

U.S.S.R. SPACE EFFORT INCREASING

During this period when we are reducing our effort by one-third, the U.S.S.R. is still increasing its effort. We must therefore face the probability that in the coming year, and in those following, the Soviets will continue to demonstrate capabilities beyond those which we will have. They will soon be in position to launch a booster with greater thrust than the Saturn V. I expect them to resume manned space flights soon. They may well land large instrument packages on Mars in 1969 and again in 1971. In terms of scientific advance and in applications of immediate economic use, such as meteorological and communications systems, our program has, in my opinion, contributed more than theirs. But in terms of the use of large launch vehicles and in the rate at which future greater capabilities are being developed, they are and will remain ahead, at our 1969 budget level. The hard fact we now face is that just as we have begun to catch up in large-scale booster operations—as shown by the flights of Apollo 4 and 5 and the bringing of Launch Complexes 34, 37, and 39 on stream—we are cutting back our program while they continue to advance.

GUIDELINES FOR FISCAL YEAR 1969 PROGRAM

NASA, like all governmental agencies, must operate within the necessary fiscal constraints. In the present situation the NASA fiscal year 1969 program and budget estimates are based on the following guidelines:

APOLLO SCHEDULE

First, we will continue with the Apollo program on the revised schedule on which our 1968 operating plan was based. A manned lunar landing by the end of 1969 depends on success in practically every one of the eight Saturn V flights remaining in our operational plan for 1968 and 1969. The next Saturn V flight is now anticipated about March 28. Our schedules and our budget estimates are based on success in utilizing the all-up test concept for both the Saturn V and Apollo. At the 1969 budget level, our ability to overcome promptly any serious problems which our test launches may show is greatly reduced.

PRODUCTION RATES REDUCED

Second, we will reduce production rates under space systems contracts and our NASA center operations in order to hold expenditures to a minimum in fiscal year 1968 and fiscal year 1969.

The delivery rate of Saturn IB's after the first 12 and of Saturn V's after the first 15 will be reduced to two per year. We are in the early

stages of developing patterns for carefully analyzing with the Department of Defense future requirements for large launch vehicles and will consider further adjustments as this work proceeds. We consider it essential to retain a minimum production capacity for the Saturn IB and the Saturn V until we obtain more flight experience with the Apollo system.

This is independent of considerations with the Department of Defense. This experience will begin to accumulate rapidly this year. We are making commitments for only those elements which cannot be delayed.

APOLLO APPLICATIONS DEFERRED

No Apollo applications flights will be undertaken until after the first manned lunar landing, and the number of launches will be sharpy limited.

You understand there that heretofore, for example in the Gemini program, we have maintained a number of options, so that if we found a rapid advance toward objectives, we could take advantage of that rapid advance.

We had tracking and data acquisition capability to fly alternate missions. We had done the software planning. We had alternate plans so that if a target of opportunity came in the way of a new advance like extra-vehicular activity, we could rapidly do it.

All of that was in the budget submitted last year to the Congress. We are now stating to you that the number of launches will be sharply limited, and the capability to take advantage of opportunities or to overcome problems encountered will not be available to us as it has been in the past.

NO SIMULTANEOUS FLIGHTS

Mr. EVINS. You are telling us, Mr. Webb, that you are not going to carry on simultaneously the Apollo applications program and the manned lunar landing program?

Mr. WEBB. This is correct.

The previous plan submitted to this committee last year was to move from the Saturn IB to the Saturn V as early as possible in the main line Apollo program and then to use the Saturn IB's for developing earth orbital capabilities in Apollo applications.

What I am saying to you is that we will be doing work on the ground. We will be preparing plans to do earth orbital flights after the lunar landing, but that we have no plans to fly Apollo applications earth orbital operations at the same time we are moving forward to the lunar landing.

Mr. EVINS. Very good.

SATURN I AND SATURN V WORKSHOPS

Mr. WEBB. A number of new studies will focus on definition of a Saturn V workshop as the major follow-on use of the Saturn-Apollo capability we have developed for initial use in the manned lunar landing.

There again this is in line with the statements you have made a number of times, that the Saturn-Apollo capability is not just for landing on the moon; it is a capability that gives us opportunities for many things, and the initial use of this capability that we have developed is for landing on the moon.

I think that is extremely important in view of my statement to you that the U.S.S.R. is developing a booster larger than the Saturn V. The ability to use Saturn V's in the future is going to be a very important element in the international position and the strength of this Nation.

The Saturn I workship will be considered as an interim step toward the Saturn V workshop.

This is the work we will be doing without launching; the planning and other preparation for the Saturn I workshop as an interim step as we develop with the Department of Defense and others the requirements for the Saturn V payloads.

FIRST SATURN I WORKSHOP IN 1970

The earliest launch of the Saturn I workshop will be in 1970. This again is keyed to the statement that there will be no earth orbital flights on the Saturn I–B while we are reaching for the moon with the Saturn V.

APOLLO TELESCOPE MOUNT

At this time we are developing data that will enable us to compare the plan under which the Saturn I workshop would dock with a later launched Apollo telescope mount (ATM) with the possible alternative of a shorter duration ATM flight that would not require it to rendezvous and dock with the workshop.

Again, Mr. Chairman, this is keyed to the fact that two spacecraft must rendezvous and dock in order to use the workshop. If we add a third spacecraft to rendezvous and dock with this configuration that is already requiring one rendezvous and docking operation, we add quite substantially to the complexity. With the reductions in funds that are available for this program, we have some concern as to whether possible delays in developing this capability might not run the Saturn I workshop into the Saturn V period; and that we should consider with the greatest of care the rapidity with which we can develop a Saturn V workshop, which would then reduce the workload on the earlier interim operations of the Saturn I–B.

We are also now finding from our studies that it may be posible to prepare designs of the Saturn V workshop that could reduce the requirements originally assumed as essential for the interim Saturn I workshop.

Again, this is keyed to trade-off decisions between what you do with the Saturn V launch vehicle and what you can do with the smaller Saturn I.

ASTRONOMY DURING SOLAR MAXIMUM

One element that runs through the problem of these trade-off decisions is the importance of astronomical observations during the solar

maximum. We are seeking with the Astronomy Missions Board and the Space Science Board to find the most effective way to proceed. This will involve an assessment of what can be accomplished with a shorter duration independent flight of the ATM, of what can be accomplished with the interim Saturn I workshop, of what can be accomplished with the Saturn V workshop, and of the problems that would be raised by waiting for the Saturn V workshop. Under our reduced budget, this is a logical way to proceed in the development of manned flight in the period following the lunar landing.

Mr. Chairman, I do not wish to leave this committee with any impression that we are uncertain as to what we would do if funds were provided.

We are in a period when I believe debate is being generated and where very careful consideration is going to be given by many men as to where we would be as a nation if we stopped the production of the Saturn V or the Saturn I–B, or if we go through a period of several years without flights. I believe the careful and logical procedure, bearing in mind that there already have been reductions in the authorization bill, requires that we must present to you the fact that we are doing the studies that will permit us at the end of the congressional determinations to go forward with a plan. This does not mean that we are uncertain as to what we would do if the budget were approved. But we must be in a position to be flexible in this period, as has been emphasized by the President.

Mr. Evins. You have alternatives and you are keeping your options open.

CAPABILITY MUST BE MAINTAINED

Mr. Webb. Yes, sir, we are. But we are also determined that the Nation not be without the capability to fly Saturn V and Saturn I–B payloads or to accelerate as the Russians begin to fly and if a determination is made that we must do so.

We do not want to have another situation as we had after Sputnik when it is a very long time before you can do anything that appears significant.

PIONEERS DEFERRED

In addition, almost all other programs have been stretched out. For example, in the physics and astronomy program, the launch schedule for the Pioneer spacecraft has been revised so that there is now a gap of more than 3 years between Pioneer E and the first of the next two missions, Pioneer F and G.

X–15 AND XB–70 PHASING OUT

Third, we are phasing out a number of flight research projects such as the X–15 and XB–70. We are terminating the orbiting geophysical observatory program after OGO–F now scheduled to be launched early in 1969.

SMALLER NERVA PROPOSED

Fourth, those urgent new starts which we must undertake will be reduced in scope. Instead of the large NERVA II nuclear engine proposed last year, we will be developing a smaller NERVA I. This will enable us to greatly increase the future capability of the Saturn V launch vehicle, but will not require the construction of extensive engine development and test facilities.

This, again, Mr. Chairman, is keyed to the instruction of the President to hold down expenditures in 1968 and 1969.

We are endeavoring to develop an engine that can pass a large amount of hydrogen through it at a smaller flow rate than the NERVA II engine. So in a sense you will have in total the power required for vastly increasing the Saturn V capability, but you will not have the capability of the very large thrust of the 200,000–250,000-pound NERVA II.

So in a sense we will apply a smaller power through a smaller engine over a longer period of time rather than to develop what we would regard as the most efficient engine.

PLANETARY PROGRAM STRESSES MARS

In the planetary program, in place of the Voyager missions, we are now proposing an extended use and expansion of the less costly Mariner class spacecraft. This program includes two Mars Orbiter missions in 1971 and two in 1973, with the 1973 missions also including a survivable rough landing capsule.

SPACE APPLICATIONS AND AERONAUTICS

Fifth, in aeronautics and in space applications we will undertake certain urgent activities in an expansion of current levels. In aeronautics, technology developed in space programs is now able to make important contributions to the improvement of aircraft. We will devote increased effort to noise reduction and the development of vertical and short takeoff and landing aircraft. We will increase our experimental work in the utilization of space systems for direct application and related economic benefit. For example, Nimbus D, planned for 1970, offers a major step forward in charting the vertical structure and composition of the earth's atmosphere. We will enlarge with other Federal agencies an aircraft program to experiment with techniques and instruments for remote measurement of earth resources. We will also start definition studies of a future satellite system for acquiring data on earth resources.

That, Mr. Chairman, is related to the decision not to start an earth resources satellite in 1969 but rather to provide funds for design studies.

We will continue to use aircraft to develop the sensing equipment we believe will be needed later for satellite use.

But it is a sharply reduced program from that which we believe could be carried out effectively; namely, an ability to get measurements of the earth's resources, including agricultural resources, from satellites.

WORK FORCE BEING REDUCED

Sixth, we are reassessing our NASA center work assignments and organization as our work force is reduced. Our objective is to retain in our research and development centers, after the reductions are made, a limited but strong and well-balanced team of scientists, engineers, program and project managers. In our work with industrial contractors and universities, where employment on NASA work is down by about 140,000 and is still dropping at a rate of about 4,000 per month, we plan to develop new ways through which the supporting research and technology funds in our contracts and an extension of step funding of university projects can help stabilize the operations on which the Nation's most experienced scientific and technical teams depend.

Here, again, Mr. Chairman, it is essential to maintain with our stage contractors, with our engine contractors and our instrument unit contractors, the capability to solve major problems should they occur in the early Apollo launches. We intend at the same time to maintain the capability to direct the work toward areas of studies that will be useful when we pick up and move in the future.

SIGNIFICANCE OF KEEPING TEAM TOGETHER

In other words, the Nation's space capability is going downhill rapidly, but we do not want to dissipate completely the capability to pick up and move again. Since we have certain expenditures which must be made to maintain a capability to launch at all, we are trying to redirect a part of that to enable us to be in a better position to make future decisions.

If we do not proceed with this program with the greatest of care, we are going to lose more rapidly than anyone believes possible today the capabilities to use these big systems, because men move toward the things they think are important for the future. If these teams begin to feel there is nothing here for the future, they are going to move to something else, long before we finish the program, because there are opportunities elsewhere.

In all these actions, we are emphasizing the continuing need for basic research and basic work in technology to insure that we will continue to strengthen our national resource base and have the ability to move forward again on a firm basis in the years to come.

COMPARISON OF FISCAL YEAR 1968 OPERATING PLAN WITH FISCAL YEAR 1969 BUDGET

Mr. Chairman, we have furnished to the committee a summary table comparing the fiscal year 1968 operating plan with the fiscal year 1969 budget. I assume you have that, and I assume you do not wish me to read through the figures.

Mr. EVINS. Without objection, it may be included with the Administrator's statement.

(The information follows:)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FISCAL YEAR 1968 APPROPRIATION ACTIONS
[Dollars in thousands]

Budget line item	House Appropriations Committee report	Appropriations committee Conference report	Nov. 6, 1967 operating plan	Current plan (fiscal year 1968 column of fiscal year 1969 budget)	Increase or decrease, fiscal year 1969 budget	Fiscal year 1969 President's budget
Research and development:						
Apollo [1]	$2,496,000	$2,496,000	$2,496,000	$2,496,000	−$457,200	$2,038,800
Apollo applications	300,000	315,500	253,200	253,200	+186,400	439,600
Advanced missions					+5,000	5,000
Total, OMSF	2,796,000	2,811,500	2,749,200	2,749,200	−265,800	2,483,400
Physics and astronomy	130,000	130,000	141,550	142,950	−1,050	141,900
Lunar and planetary	125,000	125,000	143,400	141,500	−34,200	107,300
Voyager						
Launch vehicle procurement	145,000	145,000	141,900	127,100	+1,200	128,300
Bioscience	40,000	40,000	41,800	41,800	+6,700	48,500
Space applications	88,000	88,000	99,500,	99,500	+12,700	112,200
Total, OSSA	528,000	528,000	568,150	552,850	−14,650	538,200
Electronics systems	35,000	35,000	39,200	39,200	+200	39,400
Space vehicle systems	35,000	35,000	35,000	35,000	+300	35,300
Human factors systems	21,000	21,000	20,985	20,985	+715	21,700
Basic research	20,000	20,000	21,465	21,465	+535	22,000
Space power and electricity propagation systems	44,000	44,000	44,000	44,000	+800	44,800
Nuclear rockets	46,500	46,500	54,000	54,000	+6,000	60,000
Chemical propulsion	35,000	35,000	37,200	37,250	−550	36,700
Aeronautics	65,000	65,000	66,800	66,800	+10,100	76,900
Total, OART	301,500	301,500	318,650	318,700	+18,100	336,800
Tracking and data acquisition	260,000	270,000	275,000	275,850	+28,950	304,800
Sustaining university	10,000	10,000	10,000	10,000		10,000
Technology utilization	4,000	4,000	4,000	4,000		4,000
Total	3,899,500	3,925,000	3,925,000	3,910,600	−233,400	3,677,200
Construction of facilities	35,900	35,900	35,900	37,800	+7,200	45,000
Administrative operations	648,000	628,000	628,000	640,400	+7,800	648,200
Total	4,583,400	4,588,900	4,588,900	[2] 4,588,800	−218,400	4,370,400

[1] Excludes $60,000,000 carryover from fiscal year 1967.
[2] Excludes $100,000 transfer to GSA.

Mr. WEBB. It is my understanding that you would like to turn, either before questions or after, to the administrative budgets which Mr. Lilly is prepared to present.

Mr. EVINS. Yes, we want to have some general questions.

You are a very able Adminstrator, a very distinguished American. The country is very fortunate to have Mr. Webb in the capacity of Administrator to keep this program going. We don't want you to even consider doing what Dr. Seamans did. We want you to continue to serve your country.

Mr. WEBB. Mr. Chairman, since you mentioned this on the record, I think I should say I do intend to do all I can to see that this program succeeds. I am happy indeed that you are prepared to accept these four Associate Administrators in the program here before this committee, to do things Dr. Seamans and I have done together before. All of these men are capable of carrying on no matter who is Administrator, and I am happy to say we do have a man coming on who I think could do better than I could because he is better technically trained. NASA is strengthening its position constantly in central management.

Mr. EVINS. We will have to weigh that statement until we have an opportunity to evaluate the man, Mr. Webb. We doubt if we could find any Administrator that is more able, more dedicated, or more capable than you.

Mr. WEBB. Thank you, sir.

U.S. SPACE ACHIEVEMENTS

Mr. EVINS. Mr. Administrator, we have come a long way. We have made great strides and have had many significant achievements of which we are very proud. We do not like to refer back to the time of Sputnik when we had no capability and the country had a feeling of insecurity. We did not know whether or not the Soviets were going to orbit the earth and control outer space for military purposes. Yet we have come from behind to build a great capability. We have launched more vehicles. We have gone farther and have more mileage and more time in space. We are proud of our team and our accomplishments.

NASA/DOD RELATIONSHIP

Now we want to know what the thinking is in the Agency and also in DOD with regard to the future of space as it applies to both civilian application and military purposes. Some think that for military purposes this is the greatest security that we might have. Is it envisioned in the long run that Defense will take over some of your operations?

Mr. WEBB. I think if you would have your staff examine the future programs task report that we supplied a little over a year ago, you will see projected there a large number of opportunities, with a quite clear statement that all through history whenever a nation has mastered a new environment by means of a new technology, whether it was Henry the navigator, the caravelle in the oceans, or whether it was the development of the capacity to fly by the Wright brothers with three-dimensional control, a vehicle that was unstable but could operate in a turbulent atmosphere because it was controllable, the basic relationships among the nations have changed. We saw this with the ability of the Russians to bring the ballistic missile into play at a time we thought our modern airplanes with nuclear weapons would stabilize the world. We are now entering the second decade within which much of the capability we have developed can be put to use.

SPACE TECHNOLOGY CAN HELP STABILIZE EARTH

I cannot speak for the military services. I hope that as we enter this second decade, there will be another careful preparation for appearances that would include people like the Secretary of Defense, along with me before responsible bodies, which might bring you an ability to ask questions of both of us together, rather than to have me speak for another agency. But as we approach this problem of the second 10 years, I think there is no doubt in the minds of those who know and assess technology with the most penetrating thought, that they see in space a number of ways to help stabilize the earth. We see ways to examine the vast ocean regions of the earth, to determine sea state, to assist in harvesting human food from the oceans. It is true that you can

follow large schools of fish because they do give off certain effluent materials, and as they move within their own ecology certain changes take place which can be seen and measured from satellites. Another possibility is to estimate the wheat crop of the world.

We see this capability becoming available for the entire planet earth. We also see possibilities as nations study with great care how the petroleum and other resources which are on the Continental Shelf are to be exploited, for space vehicles to assist in that process on a worldwide basis.

This brings into play the question of how political leadership can work out cooperative arrangements through which this capability can be brought into play effectively. There are several areas where the legal rights, the liabilities, the responsibilities, are not clearly known.

INTERNATIONAL TECHNOLOGY

It may well be that technology will give us a capability to join our efforts with those nations that no amount of negotiations over detailed, precise, 3-mile or 12-mile limits could ever possibly accomplish.

Further, as you examine what can be done in the air and in space with the technology already available to us, if you examine what can be done on the surface of the ocean, and beneath the surface of the ocean; I think it is clear the ability of the United States to work with technology that reaches from the bottom of the ocean upward through the air and into space gives you the opportunity to create overall systems that other nations can find very beneficial if they would join with us; and which will, in a way, make it harder for sovereignty changes in those nations to disturb. At the present time our international agreements are not very powerful when it comes to forward motion or the desire of some particular unit to drop out.

POSSIBILITY OF NASA/DOD MERGER

Mr. EVINS. The civilian and military benefits are incalculable. You have tangible benefits and you have intangible benefits. The possibilities for the future are immense, both from the civilian point of view and certainly from the Defense point of view. There have been some news reports to the effect that NASA and DOD were considering merging.

Mr. WEBB. Let me come to that in just a moment. I did want to make two other points.

Mr. EVINS. Proceed.

Mr. WEBB. The basic uncertainties that exist in the power relationships between this country and Communist areas with their drive and proven ability to use technology, is related to the forward technological motion of our own system.

IMPORTANCE OF MAINTAINING TECHNOLOGY CAPABILITY

The importance in this context of the maintenance of a capability that can do what we believe is necessary will be clearly apparent to any rational person. The momentum of technology is extremely important here. The fact that NASA has been able to work in the instrumentation field to develop the Apollo guidance system—with about

175 Ph. D.'s being trained and with some 700 masters degrees being given in the process of work in this system—with the first test of that system giving you a double reentry and a landing after traveling some 18,000 or 19,000 miles within a few miles of a ship in the Pacific, means that you have the capability now to enter the earth's atmosphere, skip out, go another thousand miles and come in accurately.

The open and clear reduction of the means to do this to general principles, and their introduction into graduate training in our engineering schools, is a capability that other nations see. And this has to do with what they judge, as rational men, this Nation can do today and will be able to do tomorrow. In a sense, the development was begun in 1958 in this agency to make it clear that risk taking where technology is the deciding element is a dangerous thing to do. To drop behind in this development of the capability to tell the other man, "don't take that risk," and to say also, "if you join with us in the development of this technology we can both help stabilize the world," is a very serious thing from the standpoint of our future military capability.

SPACE COOPERATION

Mr. EVINS. What contributions are the other countries making?

COOPERATION WITH 80 NATIONS

Mr. WEBB. I would like to say, Mr. Chairman, that we do have cooperative relationship with more than 80 nations. With respect to the Europeans research operations and the joint efforts we have with a country like France, they put in sometimes three and four times the amount that we do in the kind of things that give us the knowledge that we both need.

Mr. EVINS. I haven't known of anything that France has been doing lately other than trying to drain our gold.

Mr. WEBB. In the case of space they have instituted some systems where they have put in a larger amount of resources than we have.

Mr. EVINS. I wish you would document that for the record a little later. I saw at Wallops the number of French scientists that you are training.

Mr. WEBB. Yes, sir.

(The information follows:)

In all our international cooperative projects we share tasks and costs with our partners abroad. Following a strictly bilateral pattern of cooperation, each side funds the responsibilities it assumes. Under these arrangements, other countries have been able to share not just the published results of space research but also the doing and the achieving. In benefiting themselves, they make contributions which benefit us as well. These contributions include:

(1) Sixteen international scientific satellites, eight of which have already been launched.

(2) Eighteen foreign experiments on NASA satellites, seven of which already have been flown.

(3) Instrumentation and ground support in connection with over 550 sounding rocket launchings. (The nature and extent of these contributions vary from project to project.)

(4) Ground-based experimentation overseas in support of NASA meteorological, communications, ionospheric, and geodetic satellites.

(5) Access to areas of special geographic significance overseas.

(6) Assistance in data analysis. For example, 29 foreign scientists will perform 36 experiments out of the more than 100 to be performed on surface samples returned from the early Apollo flights.

We see good prospects for broadening and extending our present program and for accompanying increases in the significance of foreign contributions. Among these contributions would be:

(1) A fourth United Kingdom satellite.
(2) A third French satellite.
(3) A solar probe contributed by Germany.
(4) Launchings of U.S. satellites from the San Marco platform. This will allow heavier payloads to be placed in equatorial orbit with small vehicles such as Scout at considerable financial savings.

For the longer term, there is reason to believe that we may be moving toward larger and more important programs of international cooperation. One step in this direction is the international applications satellite project, in which the French are undertaking to determine the feasibility of a satellite/balloon system to gather meteorological data on a global scale. Another is the possible interest of the 10-nation European Space Research Organization (ESRO) in the possibility of dividing responsibility with NASA on major projects such as planetary probes or of assuming major responsibility for some large area of scientific investigation currently planned for the U.S. program, much as the Canadians have done for topside sounding studies of the ionosphere.

The foreign contributions involved in such projects can be substantial. For example, in the international applications satellite project, the French Space Commission is assuming full responsibility for designing and building the spacecraft and the balloons and balloon-borne meteorological sensors (which represent very advanced technology and production techniques) at a cost which we estimate may reach $40 million. NASA's contribution to the project lies principally in provision of launching for the French satellite, which will cost a maximum $3.6 million. As always in NASA's cooperative projects with other countries, the data obtained will be made available to both of the cooperative agencies.

NASA RELATIONSHIP WITH USER AGENCIES

Mr. WEBB. Your specific question about whether or not these programs should be merged relates to the policy we established early in NASA that we would not become the operator of systems. The Weather Bureau would operate the weather satellites system. They would pay us as a contractor to do the launching.

We would continue the advanced research. We have done that with the communication satellites. We have worked with the Defense Department on communication and navigation satellites.

Mr. EVINS. Does the Weather Bureau have their own satellite launching capability?

Mr. WEBB. No, sir. They come to Congress and ask for the money to do what they need and they transfer the money to us for the launching.

Mr. EVINS. They do not develop the satellites. We get all this information on television every day about the weather and a lot of people do not recognize this as being costly. The Weather Bureau provides information to the public every day.

Mr. WEBB. Yes, sir.

Mr. EVINS. They call upon NASA to develop the satellites to get the information.

Mr. WEBB. And to look at what the future requirements are.

VALUE OF WEATHER PREDICTION

Mr. EVINS. It is an important service to the American people.

Mr. WEBB. It is also important to our military services to have accurate weather data available. Our summer study last year at Woods

Hole indicated that as much as a billion dollars a year would represent the value of the ability to accurately predict the weather 2 weeks in advance.

Mr. EVINS. You are talking about the payoff. This is something the American people like.

CLEAR AIR TURBULENCE

Mr. WEBB. Mr. Chairman, in this field of weather, there is this kind of a problem. As we move rapidly with these modern jets for air transportation you run into a problem like clear air turbulence. If people flying in airplanes fear that they would drop to the earth, you would not have the economic and efficient operations we have.

We move right in with the airlines to solve the problem of what to do about clear air turbulence; and this is a very valuable capability that permits many of our commercial operations to do things they otherwise would not be able to do. It has a substantial effect.

Mr. EVINS. You are helping the Weather Bureau and you are helping cope with the problem of turbulence in the air for the Air Force and civilian transportation.

MANNED ORBITAL LABORATORY

Mr. WEBB. The other specific question you asked was about joining our programs. Under this policy I have stated, the Department of Defense is proceeding with a number of space systems. The one that has attracted the most interest is the Manned Orbital Laboratory which is a system that uses the Titan III rocket, the Gemini manned spacecraft, which we developed for the Gemini program, with some special modifications for their use, and another unit that is designed to permit the military departments to experiment with what man can do as well as to get more reliable information than they now have on matters of considerable importance to them.

They have accurately assessed the relative merit of the funds invested in this way with other things. It is not a so-called competing or duplicating space station activity. It is an operational system just as their communication satellite system is a system to serve their needs. It is not duplicative of the Saturn V workshop. You cannot consider a 25,000 to 30,000 pound payload in the same class as you consider one 10 times as large, 250,000 pounds. So it seems to me that as we reach out with a Saturn V workshop, a more or less primitive type of shelter for men to live and work in space, with extra electricity and other capability——

Mr. EVINS. I would not use the word primitive. I would use the word sophisticated.

SATURN V WORKSHOP

Mr. WEBB. No, sir; Mr. Chairman. If you built a sophisticated one as we planned to build a sophisticated planetary probe like Voyager last year, you commit large sums of money.

What we are suggesting is an evolutionary step of using a booster we have already paid for, and a $500 million launch complex, in order to put something in space that both scientists and military men

can examine and say, "how can that serve us?" There will be many opportunities that will be generated. One prominent scientist said to me—and he works very closely with the military services in many of their most important matters—if you tell me now I must design within the next 18 months the precise experiments to go on a Saturn V payload, I would get a mental block. I simply could not do it. But if you tell me you are going to put this up for other purposes I can immediately go to work, my mind opens up, and I will tell you I will have some things within the next 2 or 3 years that will be associated with that and will be extremely important, maybe set up separately, maybe tethered to it.

It is this kind of thing we must do, in my view, with the capability we have developed. The military have operational systems; we have the experimental out-in-front systems. We do not operate except on a reimbursable basis. The Weather Bureau and the Communication Satellite Corp. have paid us about $140 million for launching services and for developing new spacecraft that they need.

This is an important service.

Mr. EVINS. You complement each other. You have your orbiting laboratories and you have developed the know-how.

You have done this so well and so effectively that there are rumors that the Defense Department wants to merge with you.

QUESTION OF NASA/DOD MERGER

Mr. WEBB. There is no plan, that I know of, at the high levels of our Government to merge these activities. I believe I would know it if it existed.

Mr. EVINS. This report says the Space Agency and the Defense Department are studying the possibility of partial merging of the civilian and military man in space program to avoid costly duplication. That is the lead line. It says the results could be a large manned space station in 1973. It would be launched by the NASA giant Saturn V super rocket, and it would accommodate as many as 12 men for the military. The ferry vehicle, Titan III rocket, perhaps launched by the Defense Department, would permit periodic changes of crewmen. They are going to launch one and you are going to launch one and you are going to merge in space.

Mr. WEBB. I think I ought to say a little more.

We were not merging when they had a manned orbital laboratory and we flew the Gemini program. We used their Titan rocket. They are using our Gemini capsule. So the equipment is used. It is a national pool of equipment and capability. With respect to the Saturn V, Mr. Chairman, my own view is that if we establish an equatorial type of orbit, or maybe with coverage from say up to as high as 50 or 60 degrees above and below the Equator, the kind of Saturn V workshop—we do not call it a space station because it is not, it is a workshop to begin the capability—if the military decides——

Mr. EVINS. The orbiting laboratories and the workshops are different.

Mr. WEBB. They are different terms and different concepts.

We have an orbiting geophysical laboratory we have just put up which is unmanned.

POSSIBLE USES OF WORKSHOP

We are beginning to get more precise by saying Saturn V is a 250,000-pound payload rocket, a Saturn IB is 40,000 pounds. The manned orbiting laboratory is around 30,000. I would not care to be too precise. The point is if we put up the payload I have described, if the military services should desire a payload for their purposes, based on the same Saturn V, the same launch complex, but designed for their purposes, if you would assume they might want to put it into a polar orbit, whereas this is in an equatorial orbit, they might want to join the MOL instead of using the MOL only for 30 days and having no more use for it; if they want to dock this polar, orbiting large Saturn V payload and refurbish it and put it out again,

These are the things that ought to be examined and that they will be thinking about.

If we decide to do these things, you have to look at the launch vehicles to see how you get up. We may need a 100,000-pound logistic vehicle we would both use to get up to those orbiting laboratories or workshops.

UPRATED BOOSTERS

Sooner or later you will have a second or third generation you will call a space station, but the first one is a primitive workshop. If we need another booster of this kind that will be more efficient than any we have, you might uprate their Titan III booster. You might uprate our Saturn I–B booster or go to the 260-inch solid and develop a different booster that, once developed, would be more inexpensive for each flight.

If their flights are larger in numbers than NASA's, if our military services can gain proficiency in developing this logistic booster, I would advocate that they be given the job. That is very important.

If, on the other hand, they are busy as a ready force with problems in Vietnam and perhaps problems in other parts of the world, and they want us to do it, we are perfectly prepared to do it.

SATURN PRODUCTION RATE

In the meantime, we are both moving rapidly toward a close examination of what we need; and we are asking that the Saturn V be produced at a rate of two per year after the first 15, and the Saturn I–B be produced at two per year after the first 12. And we are prepared to change those rates of production if our studies show we need something else.

My judgment, Mr. Chairman, is that they will be increased, certainly insofar as the Saturn V is concerned, and not reduced.

Mr. EVINS The American industry in contract with NASA is developing this know-how which is useful to the military for defense.

Mr. WEBB. And useful also in saying to the rest of the world, "Don't take risks based on the assumption we are not going to have modern technology; we have momentum in technology and it is risky to assume we cannot do what is needed for our own interests, militarily or otherwise."

SOVIET'S MOON RACE

Mr. EVINS There is an article in the Star magazine. It says, "Are the Soviets faking a moon race?"

Eric Bergaust says in this article, if you read it——

Mr. WEBB. Yes, sir, I did read it.

Mr. EVINS. He poses a very important public question: Are they faking a moon race?

Mr. WEBB. He sets up a strawman to knock it down.

The article assumes the only reason we are developing the Apollo system is to land on the moon. I have said to you time and time again, we are developing a very large booster in which we are investing about $8 billion. We are developing a facility giving us the ability to launch six a year, Launch Complex 39, in which we have invested $500 million.

Mr. EVINS. We know what our goals are. We have several goals for domestic purposes and defense needs. It is not exclusively for one purpose. The question is, are they faking a trip to the moon?

Mr. WEBB. In my view, they are not, sir.

Now, here is a statement from Gagarin who is criticizing those in the West who slander the Soviet program.

Mr. EVINS. We are not slandering it, we are just wondering where they are going. They give us no information as to what their direction is. If they do give us anything, we are not sure it is accurate.

Mr. WEBB. Here is what the head of the Russian space group says. He says they are going ahead with their program of manned space flight. He is confident it is not just the conducting of another launching, but a step forward, and that the present generation will live to see man reaching the Moon and the nearest planets of Mars and Venus. That is the head of the Russian space program, Dr. Keldysh, in a recent statement. They are going ahead with all the capabilities they believe they need and they have done something we have not done; they have joined two large spacecraft in orbit, unmanned in a rendezvous operation, and they did the first landing on the moon of an unmanned spacecraft. They did the first penetration of the Venus atmosphere.

BOOSTER CAPABILITY

Mr. EVINS. The Soviets were first in space, they were first to land a spacecraft on the moon and were the first to——

Mr. WEBB. We were the first to rendezvous and dock with men, but they were the first to rendezvous and dock unmanned.

Except for the one flight of the Saturn V, they have a larger booster capability than we have.

Mr. EVINS. We have been told that for several years. The Soviets have built the big boosters. However, we have gone further. We have had more time in space. We have achieved more maneuvers, and I wish you would list them in the record.

Mr. WEBB. All right, sir.

U.S. PROGRAM VERSUS SOVIET PROGRAM

Mr. EVINS. I think the record should be made clear as to where we have excelled and what we have accomplished. We will perhaps yield on one thing, that they have built a bigger booster. We will call it a

freight car as against a sophisticated machine. We are not yielding much on that.

(The requested information follows:)

A report of the Committee on Science and Astronautics of the House of Representatives on Review of the Soviet Space Program with Comparative U.S. Data, prepared by Dr. Charles S. Sheldon II, of the Science Policy Research Division, Legislative Reference Service, Library of Congress (1967), provides a comprehensive comparison of the Soviet and United States space programs. Table 1 of this report summarizes the worldwide record of known space launchings. Tables 14 and 15 of this report show a summary of the Soviet and United States space payloads by mission category.

The Soviet space program has consistently utilized larger boosters than were currently available to the United States. It is expected that in the coming year, still larger Soviet boosters will be coming into use and that during 1968, or shortly thereafter, they will have available a booster with over 10 million pounds of thrust.

The success of the Soviet Venus 4 and the ejection of a sensor capsule into the Venusian atmosphere during its encounter with the planet demonstrate that the Soviets have made great progress in spacecraft command, control, communications, and guidance.

The Venus 4 mission was only one of an impressive list of Soviet firsts, which includes the first satellite in earth orbit, the first lunar orbit, the first pictures of the far side of the moon, the first soft landing on the moon, the first man in space and the first multimanned space vehicle.

The following is a brief summary of our estimates and evaluations of the relative status of the United States and Soviet space programs.

MANNED SPACE FLIGHT

Planned Soviet manned space activity has been delayed following the failure of the Soyus 1 mission last spring. However, automatic rendezvous and docking was accomplished by the Cosmos 186 and 188 vehicles. This rendezvous and docking capability now opens the way for the Soviets to proceed with orbiting space stations and further exploration of the moon and planets. We believe they have the capability to do a flyby of the moon with some form of life, which some believe could be man. That the Soviets will soon resume manned space operations is indicated by the public announcement of the addition of nine ships to the expeditionary fleet of the Soviet Academy of Sciences for the purpose of research work associated "with observations of space objects in the areas of the Atantic, Indian, and Pacific Oceans, and the Mediterranean Sea."

The United States carried out the first manned rendezvous and holds the record for number of manned space flights, total manned spacecraft hours, total man-hours in space and total EVA time. A comparison of the major world records for manned space flight is shown on the following table.

MAJOR WORLD RECORDS FOR MANNED SPACE FLIGHT

U.S.

First rendezvous (Gemini 7/6).
First docking of two orbiting spacecraft (Gemini 8).
First dual rendezvous (Gemini 10 with Agena 10; then Agena 8).
First initial orbit rendezvous (Gemini 11).
First tethered flight (Gemini 11).
Altitude, 853 statute miles (Gemini 11).
Longest duration manned spaceflight, 330 hours, 35 minutes (Gemini 7).
Most revolutions one flight, 206 (Gemini 7).
Most miles traveled one flight, 5,716,900 (Gemini 7).
(Total distance traveled all U.S. spaceflights, estimated to be over 17,600,000 miles.)
Individual with most spaceflight time, Lovell 425 hours, 11 minutes.
Individual with longest EVA, Aldrin 5 hours, 37 minutes.
Other records include total man-hours spacecraft hours, EVA time; manned space flights, individuals making flights, and flights in 1 year.

U.S.S.R.

First manned spaceflight (Vostok 1, Apr. 12, 1961).
First two-man spaceflight (Voskhod 2, Mar. 18, 1965).
First three-man spaceflight (Voskhod 1, Oct. 12, 1964).

First extravehicular activity (Leonov, Mar. 18, 1965).

As shown on the following charts, the U.S. total man-hours in space is 1,993 hours, 40 minutes; compared with a total of 532 hours, 53 minutes for the Soviets.

U.S. MANNED SPACE FLIGHT 1961–67

Date launched	Designation	Crew	Duration
1961			
May 5	Mercury-Redstone-3	Alan B. Shepard	15 minutes.
July 21	Mercury-Redstone-4	Virgil I. Grissom	16 minutes.
1962			
Feb. 20	Mercury-Atlas 6	John H. Glenn, Jr.	4 hours 55 minutes.
May 24	Mercury-Atlas 7	M. Scott Carpenter	4 hours 56 minutes.
Oct. 3	Mercury-Atlas 8	Walter M. Schirra, Jr.	9 hours 13 minutes.
1963			
May 15	Mercury-Atlas 9	L. Gordon Cooper	34 hours 20 minutes.
1965			
Mar. 23	Gemini-Titan-III	Virgil I. Grissom and John W. Young	4 hours 53 minutes.
June 3	Gemini-Titan-IV	James A. McDivitt and Edward H. White II.	97 hours 56 minutes.
Aug. 21	Gemini-Titan-V	L. Gordon Cooper and Charles Conrad, Jr.	190 hours 55 minutes.
Dec. 4	Gemini-Titan-VII	Frank Borman and James A. Lovell, Jr.	330 hours 36 minutes.
Dec. 15	Gemini-Titan-VI-A	Walter M. Schirra, Jr., and Thomas P. Stafford.	25 hours 51 minutes.
1966			
Mar. 16	Gemini-Titan-VIII	Neil Armstrong and David R. Scott	10 hours 41 minutes.
June 3	Gemini-Titan-IX-A	Thomas P. Stafford and Eugene A. Cernan.	72 hours 21 minutes.
July 18	Gemini-Titan-X	John W. Young and Michael Collins	70 hours 47 minutes.
Sept. 12	Gemini-Titan-XI	Charles Conrad, Jr., and Richard F. Gordon, Jr.	71 hours 17 minutes.
Nov. 11	Gemini-Titan-XII	James A. Lovell, Jr., and Edwin E. Aldrin, Jr.	94 hours 35 minutes.
	Total, manned spacecraft hours		1,023 hours 46 minutes.
	Total, man-hours in space		1,993 hours 40 minutes.
	Total, EVA hours		12 hours 19 minutes (6 hours 29 minutes standup EVA).

SOVIET UNION MANNED SPACE FLIGHTS, 1961–67

Date launched	Designation	Crew	Duration	
			Hours	Minutes
1961				
Apr. 12	Vostok 1	Yuri A. Gagarin	1	48
Aug. 6	Vostok 2	Gherman S. Titov	25	18
1962				
Aug. 11	Vostok 3	Andrian G. Nikolayev	94	22
Aug. 12	Vostok 4	Pavel R. Popovich	70	57
1963				
June 14	Vostok 5	Valery F. Bykovskiy	119	6
June 16	Vostok 6	Valentina V. Tereshkova	70	50
1964				
Oct. 12	Voskhod 1	Vladimir M. Komarov Konstantin P. Feoktistov Boris B. Yegorov	24	17
1965				
Mar. 18	Voskhod 2	Alekesei A. Leonov Pavel I. Belyayev	26	2
1967				
Apr. 23	Soyuz 1	Vladimir M. Komarov	23	37
Total manned spacecraft hours			458	17
Total man-hours in space			532	53
Total EVA time				[1] 10

[1] Additional 10 minutes spent in air lock.

PLANETARY EXPLORATION

Over the past 8 years, the U.S.S.R. has launched 18 planetary spacecraft, for an average of over two per year. With one exception in 1966, they have taken advantage of every launch opportunity to Venus or Mars since 1960. During the same time period, the United States has attempted only five planetary launches

for an average of less than one per year. We conclude from both the number and size of their planetary spacecraft that the Russians are spending many times more on their planetary exploration program than is the United States.

The United States has achieved three successes out of their five planetary launches, being the first to Venus with their 1962 launch, and the first to fly by Mars with the 1964 launch. However, the successful U.S. flyby of Venus in 1967 was somewhat overshadowed by the Russian Venera IV capsule which returned much valuable data on the Venus atmosphere and marked the first significant success by the Russians since they started their planetary program in 1960. The Venera IV is a large and apparently quite advanced lander and can be expected to complete a successful landing at the next Venus launch opportunity in 1969.

From spacecraft launched to date, it appears that the U.S. technology is superior to that of the U.S.S.R. in electronic reliability, in communications capability, and in the general sophistication of the scientific instruments. However, in view of their past unswerving effort on a strong planetary program, the Russians may be expected to increase their mission successes at future launch opportunities.

Based on past lunar experience, the Russian program seems more directed toward achieving "firsts" in space rather than in detailed followup exploration. With their complete access to U.S. plans and with their higher launch rate, the Russians are in a stronger position to go after publicity seeking "spectaculars" than is the United States. However, the resulting effort of the two countries to date has been completely complementary with no significant duplication. For example, on the moon the Russians took the first crude pictures of the backside of the moon and of surface detail from a rough lander vehicle. However, it was the United States which followed up with really meaningful detailed exploration both from orbit and from the soft landed Surveyor vehicles. It would not be surprising to see the same trend continue in the exploration of the planets. In the future, the United States may not always be first in reaching a new planet but hopefully will continue to be first in the depth and quality of the information returned.

PHYSICS AND ASTRONOMY

Soviet investigations in space physics and astronomy have emphasized the physical aspects of the earth's environment and planetary environments and generally deemphasized space astronomical investigations. Although the U.S.S.R. has a long tradition of classical optical and theoretical astronomy, optical space astronomy has, up to the present, been limited to work on sky brightness in the ultraviolet from Venus 3 and 5 and to observations of low-frequency radio emissions in interplanetary space. The radio observations made from Zond-2, Zond-3, and Venus 2 have made a valuable contribution to radio astronomy.

Space astronomy in the United States has proceeded in several broad areas. The orbiting solar observatories (OSO–III and OSO–IV) have gathered extensive ultraviolet and X-ray spectral data on the sun. These data are of outstanding quality and quantity and are not matched by any known published Soviet data. The entire field of X-ray astronomy was opened up as a result of a U.S. sounding rocket flight. Since the initial discovery, increasingly sophisticated techniques have led to the discovery of many new X-ray sources, and accurate positional information has enabled ground astronomers to make optical identification of five X-ray sources. In addition, U.S. space astronomers, using balloons, rockets and manned and automated satellites, have gathered extensive data on ultraviolet spectra of many celestial objects as well as broad radio data on the cosmic radio background at 1 to 5 MHz and the relation of the ionosphere to cosmic radio measurements.

Several of the Soviet lunar and planetary probes carried charged particle and magnetic field detectors in their instrument complement. The first measurement of the intrinsic magnetic field of the moon were made by Luna II in 1959, and placed an upper limit of 50 gammas (1 gamma equals 10^{-5} gauss) on the strength of the moon's magnetic field. Measurements by Luna X in 1966 reduced this limit to 25 gammas. Luna X also made measurements of the plasma interaction at the moon. Explorer XXXV, launched in 1967 repeated many of these measurements with more sophisticated instruments. The results from Explorer XXXV lowered the upper limit of the intrinsic lunar field to approximately 8 gammas and established an entirely different regime for plasma inter-

action with the moon. This raised some questions on the validity of the Luna X observations, which are still being debated.

The Soviet Union has a broadly supported program in ground based and space cosmic ray physics. Several cosmic ray telescopes have been flown on satellites in the Electron and Cosmos series, but their scientific contributions have not been comparable to the results from the OGO, IMP, Pioneer, and Mariner observations. The U.S.S.R. has instrumented several mountaintop observatories to study high-energy cosmic ray particle interactions. At the Tenth International Conference on Cosmic Rays, at Calgary, Alberta in 1967, nearly half of the papers on high-energy interactions originated from the Soviet Union. The Proton spacecraft, launched in 1965 and 1966 were directed toward a better understanding of high-energy particle interactions by removing the instrumentation from the disturbing effects of the atmosphere. Proton I carried a 7,000-pound ionization chamber, which was over 14 feet long. The measurements from the protons do not, however, agree with air shower measurements taken at the surface, and require a more definitive analysis of the data before the actual scientific value of the proton experiments can be assessed.

The Soviet space physics program has always been very strong in the exploration of the near earth environment. The Soviets made the first accepted measurements of the topside ionosphere using the continuous wave radio propagation techniques, and the first direct proof of the existence of positively ionized oxygen in the topside ionosphere was made with a mass spectrometer on Sputnik III.

The Soviet Union has launched over 200 satellites of the Cosmos series. These represent many diverse objectives; however, a major mission objective of the Cosmos series appears to be the measurement of ionospheric charged particles, the radiation belts, magnetic fields, and cosmic rays. In addition, the dual launched Electron I and II and III and IV were directed specifically toward space physics objectives. In spite of the magnitude of the Soviet program in these areas, very little of scientific importance has been published or made available. Major contributions on the understanding of the radiation belts has come from U.S. satellites. Although the U.S.S.R. has shown a strong and traditional interest in ionospheric and auroral phenomena and has powerful theoretical schools in these disciplines, as far as we know, they have not flown satellites similar to the joint Canadian/United States. "Alouette" topside ionospheric sounders or the U.S. auroral and radiation belt satellites such as the University of Iowa "Injun" satellites or the Polar Orbiting Geophysical Observatories. The scientific results when compared to the number of Soviet launches and the tonnage in orbit suggest the conclusion that Soviet interest in space physics and astronomy is very strong, but that their contributions will become competitive with U.S. investigations only after their spacecraft and scientific instruments and supporting electronic capability attain the technological sophistication present in the U.S. space program.

SPACE APPLICATIONS

In all areas of space applications the United States has demonstrated technical capabilities equal to, and usually better than, those demonstrated by the U.S.S.R. Our spacecraft are in routine operational use in communications, meteorology, and geodesy, with the data receiving worldwide recognition and use. Our spacecraft have consistently demonstrated their superior reliability and longer useful lives in space. The U.S.S.R. spacecrafts, however, have been heavier and equipped to supply more electrical power for use by the sensors, radio transmitters, etc. Thus, utilizing the same spacecraft, the U.S.S.R. has the potential to exceed our capability, provided they develop the reliable, sophisticated equipment to put aboard their satellites.

Some of the U.S.S.R. communications satellites, called Molniya, are reported to be operational today. Since April 1965, seven of these have been launched into the inclined, elliptical orbits which are most suitable for Soviet operational use. The only tests conducted outside he U.S.S.R. which we know of have been with the French, and these were reported to be very successful.

The Soviets have established a number of ground terminals, called Orbita, for television distribution where terrestrial systems are not available.

They have published discussions of a synchronous altitude communications satellite system which they have studied and designated Molniya II, but we are not aware of any effort to put such a system into operation.

The United States has led in every area of satellite communications. The Telstar and Relay experimental satellites preceded the first launching of Monlniya I and 3 and 2½ years respectively. The United States, with Syncom II and III, successfully demonstrated synchronous altitude and geostationary communications satellite operations. The Soviets have not yet succeeded or attempted this, nearly 5 years after Syncom II. The United States routinely uses synchronous geostationary satellites on missions for the Communications Satellite Corporation and the Department of Defense. NASA continues to use the technique as exemplified by the applications technology satellies (ATS I and III).

The U.S.S.R. first announced the launch of a meteorological satellite in June 1966 (COSMOS 122), over 6 years after the U.S. launch of Tiros I and about 2 years after the more comparable Nimbus I. The U.S. Tiros Operational Satellite (TOS) System began providing data in February 1966. The Soviet experimental meteorological system "Meteor" utilized Cosmos 144 (launched February 1967) and Cosmos 156 (April 1967) but lacks the daily worldwide coverage capability of the TOS system. The data obtained are utilized by the U.S.S.R. weather services and in the United States/U.S.S.R. data exchange. In addition, the U.S.S.R. has launched Cosmos satellites (such as Cosmos 149 in March 1967) as part of their atmospheric research program, with objectives similar to those of the Nimbus program; that is, primarily directed at long-range weather prediction.

A brief comparison of the Meteor, TOS, and Nimbus spacecraft now in orbit is given below:

	Meteor type	TOS	Nimbus
Approximate weight	4,000 pounds	300 pounds	1,000 pounds.
Power	1,000 watts	50 watts	480 watts.
Sensors	3 infrared and 2 TV	1 infrared heat budget and 2 TV.	2 infrared and 2 TV.

In addition, the United States has obtained both black and white and color pictures from the ATS satellites in geostationary synchronous orbit. The Russians have obtained black and white pictures at synchronous altitudes using their Molniya spacecraft at the high end of the elliptical orbit.

In the field of satellite geodesy, the United States has launched six spacecraft, whereas the U.S.S.R. has announced none. However, to a considerable extent, certain U.S. satellites (Echo–I and II, and Pageos) and geodetic satellite systems (Doppler beacons, laser reflectors, etc.) can be used by any nation without reference to U.S. control since the satellites are passive or the systems operate continuously.

The United States and the French have had significant success with laser tracking systems which appear to provide results five times more precise than optical or electronic observation systems. There have been no U.S.S.R. announcements concerning the development of laser tracking systems, however the U.S.S.R. has indicated that they have used the Echo satellites for geodetic measurements, and cooperative programs with European and U.S. scientists have been conducted consisting of observations of the flashing lights on Geos I at a station in Riga, Latvia. The latter are nonlaser efforts.

BIOSCIENCE

Biological experimentation in space has been carried out by Russian and American biologists, first as precursor flights for manned space flight, and second to determine the effects of space flight and space environment on living organisms, including man.

The Russian space biology effort is far more extensive than the American effort, and involved flight of 56 different species or biological preparations in 14 orbital space flights, many being the major payload. Russian experiments mainly involved study of the biological effects of ambient cosmic radiation. Since the dose levels were so low there were few positive results except on the effect of vibration and some on weightlessness. Many experiments were poorly controlled; however, the Cosmos 110 flight with two dogs for 22 days in orbit was highly sophisticated and produced very valuable results. Indications are that space biology has been given a relatively high priority in Russia, and the results have been utilized extensively in their manned flight program.

The American space biology program has been delayed in comparison with the Russian, and except for a few small attempts at suborbital flights, biological experiments have been a "piggyback" basis until the first biosatellite flight in late 1966. The American biosatellites while late are well controlled experiments with specific hypotheses involving the biological effects of weightlessness, and weightlessness combined with a known source of artificial radiation. We believe the results of biosatellite II nearly equal those of the entire Russian program with the exception of the Cosmos 110 flight which is nearly comparable with the U.S. 30-day primate biosatellite flight which will occur early in 1969.

LUNAR EXPLORATION

As shown in the following table, comparison of the major achievements which the United States and the Russians have already made by means of automated spacecraft indicates that—

(1) The Soviets have consistently led in lunar exploration firsts (e.g., impact, farside photos, soft-landing, soil bearing strength, orbital remote sensors)

(2) The United States has consistently obtained the more extensive and meaningful data (e.g., Ranger photos, soil behavior and composition, high resolution Lunar Orbiter photos)

The measurements which our space program have returned have confirmed the selection of manned landing sites in the lunar maria and the landing gear design of the Apollo lunar module. We have gained extensive knowledege of lunar features (major craters, sinuous rilles, etc.) which will substantially enhance the scientific return from Apollo and subsequent lunar missions. It is unlikely that the Soviet program has developed such a comprehensive understanding, although our results are freely published.

In ground-based optical astronomy, radar investigations, telescopic mapping of lunar geology, and field studies of terrestrial analogues of lunar features, the United States appears to hold a long sustained lead over the Soviets. Very little has been published in these fields by the Russians, although their equipment and techniques are believed to be quite sophisticated.

LUNAR EXPLORATION ACHIEVEMENTS

United States

Ranger VII, VIII, IX July 31, 1964, February 17 and March 25, 1965: First high resolution photos of lunar maria and interior of Crater Alphonsus (maximum resolution about 2 feet; 2,000 times better than earth-based photography).

Surveyor I, III, V, VI, VII—June 2, 1966; April 19, September 11, November 9, 1967; and January 9, 1968:

- Soft-landings on lunar maria (four sites) and highlands.
- First soft-landing on lunar highlands (Crater Tycho rim).
- Detailed texture and behavior of lunar surface material.
- First color photographs of lunar soil (dull grey).
- Verification of radar reflection from near surface rather than from depth.
- First demonstration of lunar soil cohesion, rock strength, trenching, soil manipulation.
- First direct measurement of lunar soil elemental composition (similar to terrestrial basalt).
- First detection of magnetic particles in surface material.
- First rocket erosion test on lunar surface.
- First hopping of spacecraft from initial lunar landing point.
- First on-surface measurement of polarization.
- First evidence of crystals in lunar rocks.
- First on surface detection of laser beams from earth and observations of solar corona.
- First correction of mechanical malfunction (alpha scattering deployment) by remote control.

Lunar Orbiter I, II, III, IV, V—August–October 1966, November 1966–October 1967, February–October 1967, August 1967–January 1968:

- Medium and high resolution (to 3 foot) photos of lunar surface including:
  - Potential landing sites for Apollo, Surveyor and future lunar missions.
  - Lunar features of scientific interest.
  - Entire nearside and farside (150–450 foot resolution).
- Detailed data on lunar gravity field.
- Measurements of micrometeoroid impacts and radiation environment.

Union of Soviet Socialist Republics

Luna II—September 13, 1959:
- First lunar impact.
- First pennant to be placed on the Moon.
- First measurement of lunar magnetic field.

Luna III—October 1959: First photos of (70 percent) hidden side of the Moon.

Zond III—July 20, 1965:
- Completed photography of Moon's invisible side (except for 5 percent).
- First measurements of lunar surface using:
  - Ultraviolet spectrophotometer and spectrograph.
  - Infrared spectrophotometer.

Luna IX–XIII—February 3 and December 24, 1966:
- First soft-landing on lunar surface.
- First photographs of detailed surface texture.
- First estimates and direct measurements of bearing strength.
- First direct measurement of level of radioactivity.

Luna X–XI–XII—April, August–September, and October–November 1966:
- First estimate of lunar surface composition from orbital gamma-ray spectroscopy.
- First measurement of lunar gravity field from orbit.
- First measurement of reflection and scattering by the Moon of radiowaves from a lunar orbiter, indicating dielectric constants of surface rocks.

Zond IV—March 8–12 (approximately), 1968: First circling of Moon at orbital distance and return of spacecraft to Earth vicinity.

In summary, in terms of scientific advances and in applications of space systems to economic use, such as meteorological and communications systems, we believe our program has achieved a more advanced state than theirs. But in terms of capability to use large launch vehicles and in the rate of advance toward future greater capabilities, they are and will remain ahead at the 1969 budget level which we are presenting. The hard fact we now face is that just as we have begun to catch up in large-scale booster operations—as shown by the flights of Apollo 4 and 5—we are sharply reducing our program while they continue to advance.

SOVIET INVESTMENT IN SPACE

Mr. WEBB. Let me simply say this, Mr. Chairman: We have done remarkably well. I believe we have given this country its money's worth. At the same time, I would be derelict in my duty if I did not point out to you that as we are laying off 140,000 people and reducing our level of effort by $1,300 million per year, they are still increasing, and it is a very important fact of life——

Mr. EVINS. What is the Soviet cost in space compared to that of the United States? Have we any way of comparing their program to ours?

Mr. WEBB. Yes, sir, we make comparisons.

Mr. EVINS. What is the round figure estimate?

KOHLER STUDY ON SOVIETS

Mr. WEBB. In terms of manpower—and the equivalent of dollars, it is roughly the same. Some people think their input is something like 10 percent or so below ours. I have just authorized a study by Mr. Foy Kohler, who is leaving the State Department and going to the University of Miami. This is a 3-year study in which he will examine this very question: What have they gotten from the space program? What have we gotten and how do you compare the two?

I am told by everyone that he is probably the outstanding man to do it. He has undertaken to do it and will be here this week to talk with me about it.

Mr. EVINS. We have some assessments to date, haven't we?

FRACTIONAL ORBITAL BOMBARDMENT SYSTEMS (FOBS)

Mr. WEBB. I am saying, sir, that the capability to build an industrial base using modern technology is dependent on the kind of things you do in space and the total power of these two nations is something we must look at. And that their buildup of capability to proceeding rapidly which not only permits them to fly, but to do a large number of other things.

I would like to say one other thing. The recently announced Fractional Orbital Bombardment System, which means you don't go up to a very high altitude and drop down on one place, but can in fact proceed over long distances not very far above the atmosphere——

Mr. EVINS. The former Department of Defense Secretary, Mr. McNamara, said that the FOBS, Fractional Orbital Bombardment System, might be more important than putting a man on the moon. The Soviets are more interested in this than in placing a man on the moon, he says.

Mr. WEBB. The same booster power is required for payloads that are used for different purposes. If their very large booster should put very large payloads across this country a number of times—and we have no capability to do this—I think the psychological impact would be as great as missiles in Cuba.

Mr. EVINS. Mr. McNamara wanted Congress to go away, but Congress hasn't gone away and he has.

Mr. WEBB. I speak of the continuation of the production of Saturn V's at two per year and I am speaking for the continuation of momentum in technology which can make the risktaking features for the other side greater than what it otherwise will be, Mr. Chairman.

ELIMINATION OF MOON LANDING

Mr. JONAS. If you proceed with two Saturn V's a year, it would eliminate their use in putting a man on the moon and how much reduction in spending would be accomplished?

Mr. WEBB. If we cancel Apollo——

Mr. JONAS. The actual landing and go-ahead with Saturn for use in Apollo application and eliminate the effort to land on the moon, how much are we talking about in terms of reduced spending?

Mr. WEBB. We will give you a statement for that.

(The information follows:)

The total cost estimate for the Apollo program (development and test of the Saturn Booster/Apollo spacecraft and related tracking, data acquisition, mission operations and launch systems) is $23.896 billion. This total estimate includes the complete development, production and launch of 12 Saturn I–B and 15 Saturn V launch vehicles, related spacecraft and operations cost, and related support in terms of tracking and data acquisition, construction of facilities, and operation of the three manned space flight centers through the period required for the launching of these 27 boosters.

In terms of hardware production, manufacturing of all 12 Saturn I–B vehicles has been completed. By the end of fiscal year 1968, the ninth Saturn V will be completing final assembly, and the remaining six will be in various stages of manufacturing. At this time Block II CSM–109 and LM–8 will be undergoing final assembly. All manufacturing, ground test, checkout, and launch facilities have already been completed and are in operation.

To answer the question posed by Mr. Jonas as to possible savings if we were to cancel the commitment to land men on the moon but proceed with the produc-

tion of launch vehicles and related spacecraft to continue earth orbital operations, the following is supplied:

Of the total estimated cost of the above Apollo program ($23.896 billion) $18.972 billion will have been obligated by July 1968.

To complete the development and production of the launch vehicles and spacecraft, approximately $3.1 billion will be expended in the period from July 1968 through 1971. Of this amount, approximately $1.6 billion will be used to complete the production and test of the Saturn V launch vehicles and $1.1 billion to complete the production and test of the command and service modules. The remainder, approximately $400 million, will be expended to complete the production and test of the LM.

At this advanced phase of the program, if we stopped all production of the remaining lunar modules, the development efforts on the command module to adapt it to the lunar module, development and production efforts on the Apollo lunar experiments, and the portable life support systems and spacesuits for use on the lunar surface, it is estimated that after contract termination costs and liabilities were settled the net savings would be approximately $450 million.

Mr. JONAS. Can you give a barnyard figure now and correct it?

Mr. WEBB. Mr. Jonas, the problem is if we eliminated the program for landing on the moon we would, I am sure, not continue the heavy expense of developing the Apollo spacecraft which is specialized for that purpose.

Mr. JONAS. In other words, you could make a smaller spacecraft for unmanned use?

Mr. WEBB. We would have made a different spacecraft for the sole use of men around the earth.

Mr. JONAS. You would eliminate the retrorocket to return the men.

Mr. WEBB. We would consider eliminating the Lunar Module and the Command Module and Service Module, all of which together are costing us about $7 billion. We have spent a good deal of that money already, but we would not continue all of those, I am sure, if we were going only to earth orbital operations with a Saturn V.

Mr. JONAS. In line with the questioning of the Chairman, I just wondered how much we are talking about in saving if we would proceed, with your two Saturn V's a year, but use them in Apollo applications instead of putting in the necessary extra equipment which would be involved in landing people on the moon and bringing them back.

Mr. WEBB. How soon would you want to use the Saturn V for earth orbital operation, in 1973 as we now plan?

Mr. JONAS. I suppose you wouldn't have to use them any sooner than that because you still have some Saturn I's and uprated I's that you are planning to use along with the V's, for your less important missions, is that correct?

Mr. WEBB. Yes, sir. Not less important; they are merely preliminary missions.

Mr. JONAS. Less expensive?

Mr. WEBB. Yes, sir.

Mr. JONAS. And your program contemplates continuing with those activities and I would assume that if a decision were made to cancel the plan to land on the moon, that wouldn't necessarily destroy the space program, but it would reorient it and I just wondered, as a basis for our further discussion if we could have some idea of about how much money we are talking about.

Mr. WEBB. I would like to supply a statement for the record on this, but basically I would like to say now that we are at a point that

we will likely not fly another unmanned Lunar Module, but will fly—after this next Saturn V flight this month—men on the third Saturn V. I say this is at least a 50–50 possibility.

Mr. JONAS. You have flown how many so far?

APOLLO SCHEDULE

Mr. WEBB. One of each. One LM flight, unmanned, and one Saturn V up to now. We have another Saturn V about the 28th of this month. If that is successful, we have an excruciatingly painful and difficult decision, and that is whether to put men on the third Saturn V and the second Lunar Module.

If we make that decision, we will have one interim flight before that which is to fly a manned Apollo Block II spacecraft about August or September.

Mr. JONAS. Are you planning to send men to the vicinity of the moon before you try a landing?

Mr. WEBB. Let me come back to that in a moment because I don't want to lose the continuity. I want to make it clear that if we do make the decision that we will not go unmanned on the second LM flight and not go unmanned on the third Saturn V flight, we will then proceed to man the first Block II spacecraft flight and fly it late this summer.

We will then proceed to the first Saturn V flight that will include all of the equipment, and do that before the end of the year.

Now, these are clearly early developmental flights to prove that the equipment works.

Mr. JONAS. The calendar year?

CHANCE OF LANDING ON MOON IN 1969

Mr. WEBB. Calendar year 1968.

Then we will proceed next year with flights—five flights—to exercise the Apollo lunar landing capability around the earth. We will reach out thousands of miles, test out this equipment, and on some one of those five flights next year—calendar year 1969—we would expect to land on the moon. We hope to. We think there is a 50–50 chance that we can.

Mr. JONAS. We were originally talking in terms of 15.

Mr. WEBB. We have 15 Saturn I's in the program but we have been constantly reducing the money, and NASA has constantly been telling you how many we could fly before the end of the decade with the money you give us.

Mr. JONAS. Now, you are saying there is a possibility that somewhere between six and 10 you would be ready to——

Mr. WEBB. To head for the moon.

Mr. JONAS. To head for the moon with men?

Mr. WEBB. Yes, sir.

Mr. JONAS. You are not now prepared to say whether it would be six, seven, or eight until you finish your testing?

Mr. WEBB. That is right, or it might take all 15. We have a high level of confidence that we can do it within the nine flights that are scheduled within this decade, that is, before the end of 1969.

EXCESS HARDWARE

Mr. JONAS. We have a colleague on the Legislative Committee who contends you are putting a lot of hardware on the shelf, that you are not going to need all of these Saturn V's that you want to buy. Will you speak to that?

Mr. WEBB. Surely, but could I just finish this one thought?

Mr. JONAS. Surely.

Mr. WEBB. The point I would like to make in answer to your first question is that we would have to conduct these tests in this calendar year. That is to plan the first Block II Apollo, and to conduct the manned flight on the Saturn V with the whole system. We have spent the money to do that. We certainly wouldn't fail to get back the experience, to get back the measurements of how that equipment worked in space, having spent such large sums to build it. So now, if we completely eliminated the landing on the moon as an objective, what in fact we would be eliminating, I think, are those five Saturn V flights for the calendar year 1969. And we would stop the expenditures related to those features of those flights that head for the moon; we would be reorienting toward the use of the Saturn V for other purposes, and possibly for synchronous orbital operations and near-earth orbital operations.

MONEY SAVING NOT GREAT

The amount of saving at this point in time would not be great because most of this money to permit us to land on the moon has been spent, but there would be some because we would stop paying maybe 100,000 people who have been working on these things.

Mr. JONAS. You could begin bringing back some payloads with these Saturn V's that you are planning to use now merely for test purposes, wouldn't you?

Mr. WEBB. Well, we have got to have two or three tests. Normally you have 40 or 50 tests of a big rocket. We are going to have only two or three here.

APOLLO APPLICATIONS PAYOFF

Mr. JONAS. Dr. Mueller told us last year that these Apollo applications for that program are really the only payoff possibility in the entire program.

Mr. WEBB. But we didn't get the money to do it so we are postponing it. What we plan to do is pick that up again in the future.

Mr. JONAS. I am talking about what would be the result if you would convert right now to what we have been referring to as Apollo applications in lieu of the manned lunar landing.

Mr. WEBB We would certainly cancel some part of the amount of money that is going every week and every month to pay the people building and getting ready to fly on the lunar landing expedition. We would then convert, to the extent you would approve it, to payloads to fly in earth orbit.

Mr. EVINS. The discontinuing of the lunar landing program would kill the incentive of the space team. This is a psychological factor. This is the thing that has provided momentum for the space program.

There have been decisions since I have been here in which the Congress has canceled programs but I don't think they are thinking about canceling this program.

FIGURES RELATE TO 1969

Mr. WEBB. I hope not, Mr. Chairman, because I think it would be an extremely serious matter for the country to say to the world that it was going forward with this and then decided it couldn't or wouldn't proceed.

I think Mr. Jonas has asked a perfectly proper question, that we put in the record what money would not be spent if we did cancel it. The question is when you would stop what you are doing. My own view is we would have to fly the early test flights of these equipments in order to get the information as to how they work, having already spent so much. My figures will relate to the beginning flights in calendar year 1969. I think the other things we will just simply have to do.

Mr. JONAS. I would say in response to the chairman, there is a considerable body of opinion in my judgment that is still unconvinced that anything practical will result from the mere landing of somebody on the moon and bringing him back. You have many experiments you can make in space. I don't think the whole program collapses if you reorient it. I am not saying I am prepared to disapprove it, I am just raising questions to make a record here. The chairman, himself, has read into the record, already this morning, some statements indicating the speculation over this proposition. I just thought we should know what we are talking about in terms of money.

Mr. WEBB. Would you like to hear from Dr. Mueller or Dr. von Braun?

Mr. JONAS. We already know he wants to go to the moon. What I am interested in is what money we are talking about.

RESULTS OF $500 MILLION REDUCTION

Mr. EVINS. The goal has been set and we are working toward it.

We had a temporary recession in the space program last year of about a half billion dollars. We have been funding the program at about the $5 billion level. We are down now to four and a half. We have cut back a half billion dollars. What was the effect of the cutback on the space program funding last year?

Mr. WEBB. The net result was to postpone the Apollo applications program, to cut the production rate of Saturn I–B and Saturn V vehicles down from four per year to two. That controls how much flying we are going to do in the future because these are long leadtime items. It reduces our capability to operate in space substantially to go from four of these vehicles per year down to two.

It has caused us to cancel a substantial number of flights that we thought should be done, if we were going to provide a space program at a level of about $5 billion per year.

Mr. EVINS. Your production rate has been cut in half by a half billion dollar reduction?

Mr. WEBB. Yes, sir, on these two vehicles.

We have also canceled the Voyager program for a very able-bodied and capable vehicle that would have served us for from 10 to 20 years in interplanetary work and introduced the smaller Mariner-type of vehicle as well as stretched out the flights.

The program is about one-fourth or one-fifth of the program we presented last year insofar as planetary flights are concerned.

The ability to build up manned earth orbital capability has been put off for, in my view, at least 2 years and maybe longer. So in fact the decision not to fly Saturn I–B and Saturn V payloads at the same time and to develop the alternate applications capabilities that will permit us to take advantage of success, has cut the effectiveness of the things after the lunar landing by, I would say, at least a half or maybe more.

We are eroding the capability to move rapidly over the next 2, 3, or 5 years in what we are doing here.

REDUCTION IN EMPLOYMENT

Mr. EVINS. How much has employment been reduced?

Mr. WEBB. I would have to give you the figure, but my guess is about 4,000 or 5,000 per month; and multiply that by 12: 60,000 per year.

Mr. EVINS. Dr. Mueller, Dr. von Braun, tell us what your thinking is regarding these programs.

Dr. MUELLER. I must confess, Congressman Jonas has astounded me by a shocking observation.

Mr. JONAS. I would like to say I don't see anything shocking about it. The shocking thing is the amount of money involved.

EFFECTS OF CUTBACKS

Dr. MUELLER. I was thinking of the observation that there was a strong body of opinion that we ought to shift away from the national goal that was established some time ago, to which all of us have been working very hard for the last 7 years. The effects of the cutback in funds last year are obvious in terms of the basic institution that we have created in NASA for carrying forward these complex research and development programs.

Dr. von Braun can speak to the impact at Huntsville of the reduction in force that we have had to implement there and, of course, the same thing has happened except to a lesser extent, at Houston, because of the need for the people there in the operations that we are now describing for both the Saturn I and the Saturn V programs.

ORBITAL OPERATIONS DELAYED

We have, in addition to that, delayed the beginning of earth orbital operations for approximately 2 years, from that which we presented to the committee last year as a consequence of the cutback in R. & D. funds.

We have tried to the best of our ability to minimize the expenditures in fiscal year 1968 and fiscal year 1969, while maintaining a very minimum capability of moving forward in the manned space flight program.

I know from the work I have been doing with Dr. Naugle that we have been going through exactly the same kind of careful analysis, in the unmanned programs, the scientific applications programs for unmanned flight.

I think the budget we are presenting this year is at a lower level than I would have thought possible and still maintain forward progress in the space program. I do believe it is a minimum budget, but I think in turn there is a heavy responsibility on the——

Mr. JONAS. You told us that when it was $5.5 billion that we couldn't cut it without destroying the program. So that brings into some question the validity of your testimony.

Dr. MUELLER. Sir, I never did say you couldn't cut it.

Mr. JONAS. You said you couldn't cut it safely.

Dr. MUELLER. Well, I have just discussed the consequences of the actions last year.

As I was going to say, we are doing our best with the resources that Congress has made available, to sustain a viable space program.

We have here constructed a program that really is a minimum program.

I think in turn we have constructed it in such a way that you can in fact make decisions as to whether or not you should proceed.

PROGRAM STRETCHED OUT

Mr. JONAS. I will say this to you and the Administrator, too, that I don't think you would have been facing these possible cuts of $1.3 billion a year if you had been a little more modest in your program. You took the position then when the budget was over $5 billion that it couldn't be cut, and the cuts had to be forced on you.

Now you say you still have a viable program. It is somewhat stretched out, but you didn't offer to stretch it out before.

Dr. MUELLER. Mr. Jonas, we did in fact tell you the consequences 2 years ago, what the level of cuts would do and they are doing exactly what we said they were going to do.

If you will look back in the record, we were requested to establish what are the consequences that will take place, and we did in fact provide you with a list of those consequences 2 years ago and 3 years ago.

I think it is true that if you wanted to have a program that was going to maintain a position of leadership by the United States in the space programs of the world, that you would need to spend somewhere between $5 billion and $6 billion a year. You are now talking about spending $4.3 billion a year and you aren't maintaining your leadership in the world.

Furthermore, it isn't a leadership in space we are talking about. That money is going into the development of a basic understanding of new technology, which is probably unequalled in the world today. It is this technological know-how that is being created as a result of the space program which is providing us with a competitive edge in international trade, in our ability to move forward. Without that basic technology, without a continuing development of our understanding of how to use science and technology effectively in our industrial system. We are talking about the future of the Nation. If you don't have that, you are going to fall behind the rest of the world.

BENEFITS OF LONG-RANGE PROGRAM

Mr. JONAS. Isn't it more efficient and more effective to have a long-range program of expenditure that you can live with over the years instead of going up and down like a yo-yo?

Dr. MUELLER. I surely agree.

Mr. JONAS. The question I am asking is, wouldn't it have been better had you shown a little disposition to do what you are doing now 3 years ago and we could have gotten this program down to what we could afford over a long pull than to have to drastically cut it $1.3 billion per year?

Dr. MUELLER. Mr. Jonas, the problem we had is that you did not relieve us of the obligation of carrying out the manned lunar landing and that is what we have spent the money on.

Mr. JONAS. Mr. Administrator, you wouldn't recognize then that we had a fiscal crisis that we were approaching. You are recognizing that in your statement today and you say you accept that?

NATIONAL NEEDS IN SPACE

Mr. WEBB. Mr. Chairman, I say the President has recognized it and I am supporting it.

Mr. JONAS. You say you accept it and you say it is a program that can be effective, but you say because of this fiscal crisis it is not in the best interest of the country; that the position we have to take now is not—I forget the words you used—it doesn't meet the Nation's needs.

Mr. WEBB. What I am saying is that somebody has to answer some time for not having met these needs; and you are going to spend more money before you are through and have a greater risk that we will not be able to stabilize the world as soon as we otherwise would.

Mr. EVINS. Mr. Administrator, in another committee the Corps of Engineers testified that the cost of construction is going up about 5 percent a year and in delaying construction you can add on this cost. We had some testimony that they cut back about $67 million, and the net effect is, as I understand it, to save $67 million, we are losing $250 million or $300 million. That is their testimony, so I would imagine that construction costs may go up. We hope they won't. We hope that you can hold them down, but as I recall your testimony a year or so ago, you indicated that this cutback might cost a billion dollars more in the long run.

COST OF LUNAR LANDING

Mr. WEBB. We originally said we would do the lunar landing for between $20 and $40 billion.

Mr. EVINS. I remember hearing $20 billion.

Mr. WEBB. The first statement was between $20 and $40 billion. We then settled in on the $20 billion figure as what we were saying to Congress we were prepared to do.

Mr. EVINS. When was that first statement made?

Mr. WEBB. This was made in 1961.

Mr. EVINS. I remember the $20 billion, but I don't remember the $40 billion.

Mr. WEBB. There have been a number of years in which cuts were made. One of them was $612 million. Last year, $511 million. Almost every year there has been between $100 and $200 million cut.

Now, the net effect has been to increase the cost of doing the lunar landing, even if we do it on No. 9 Saturn V, by almost $4 billion, so the cost today is running nearer to $24 billion than it is to $23 billion.

Mr. EVINS. You used to say it would cost $1 billion more and now you are saying $4 billion more.

Mr. WEBB. And I say our situation in Vietnam and North Korea is affected in part by the fact that we didn't do this lunar landing in 1967 and 1968 and move on with this program.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. EVINS. Back on the record. Repeat what you said off the record.

RECOGNITION OF SATURN V SUCCESS

Mr. WEBB. I would say the fact that we were able to fly the first Saturn V all up, with all systems working, within 1 second of the time we estimated it, has a beneficial effect on our present situation in the world.

It was recognized in other capitals around the world who are not friendly with us that we had made this achievement.

Mr. EVINS. We are all pleased with these successes.

ESTIMATE OF SAVINGS BY ELIMINATING MOON LANDING

Mr. WEBB. May I speak to Mr. Jonas with a rough estimate of figures which I would like to correct in the record?

We have through fiscal year 1968 had obligational authority of about $19 billion in the total lunar landing program.

Our projections for building the spacecraft in that program for fiscal 1969, 1970, and 1971, with the 1971 figure being under $100 million, is $1,500 million roughly; $1,481 million, precisely.

The continued production of Saturn V's—that is, to finish the 15—and to do the necessary procurement to maintain two per year, is another $1,557.1 million.

There is a mission support figure here for those 3 years of $682 million. So you have between $3.5 and $4 billion in the next 3 years related to the lunar program. Not all of that could be saved. If you cancel contracts, you have termination costs. You have the fact that if you conduct the tests on the Saturn V to prove out the system so you have qualified a rocket for our national launch vehicle program, you have to pay for those tests, so you can't save those funds.

So my guess is that it is considerably less than that projected $3.5 to $4 billion that could be saved if you simply said we are not going to do it.

I stated the figures for over 3 years, and the amount in 1971 is really quite small. The Saturn V figure is $140 million. Spacecraft, $91 million, and mission support, $145 million. So we are really talking about 2 years with somewhere near $3 billion devoted to this purpose, after we have spent something like $18 to $19 billion.

Mr. EVINS. Dr. von Braun, we want to hear from you about your goals to land a man on the moon and safely return him.

CANCELLATION OF LUNAR LANDING

Dr. VON BRAUN. Mr. Chairman, let me first say that I share Dr. Mueller's and Mr. Webb's feelings, that Mr. Jonas' statement here that we seriously consider reneging on our national commitment to land a man on the moon in this decade came as a shock to me.

Mr. JONAS. May I interrupt? If you will read back my question, you can't draw that implication from it at all, and I am amazed that you—the Administrator didn't draw that from what I said. You and Dr. Mueller do.

I don't question your right to be shocked, but I am not suggesting any reneging on any commitment. I am merely asking what it would save in the way of money. I did say there is a considerable body of opinion in this country that has little faith in landing a man on the moon. I didn't say how large it is because I don't know, but I read it in the literature published. There are some people who say there is not any reason to land a man on the moon. They are willing to spend money in space, but they would rather see some practical results from it than merely winning a race that somebody announced we were going to win about 10 years ago.

If you are shocked, I would like to relieve you of a little of the shock. I have not proposed that we do this. I am asking some questions because I think the country should know what kind of money is involved.

Dr. VON BRAUN. I am very glad to hear that perhaps I misunderstood you. I am glad to hear that you don't really share this view.

Mr. JONAS. I didn't mean to say that. I say I haven't proposed it yet. I am trying now to get some information before I come to an opinion.

Dr. VON BRAUN. I feel a little more free to comment on the subject. I don't think it really would make sense.

Mr. JONAS. You are free to say anything you want.

MOON EFFORT IS IN FINAL STRETCH

Dr. VON BRAUN. We are 600 days or less away from the landing on the moon and the commitment was made 7 years ago, so I think it is probably fair to say that we are coming in on the final stretch of the thing, and the very idea of reneging on this national commitment reminds me of a man who spent 7 years of labor and money on developing a nice citrus orchard and now that the fruits are ripe and ready for the plucking, he decides he wants to save some money by not paying the fruit pickers, with the result that the fruits will rot on the trees. I think this is about the situation we are in.

I believe, secondly, from all our past experience of contract terminations, the net result of any termination of contracts or even reorientation of objectives at this stage of the game would be utterly disappointing. Normally, when we terminate contracts that are already in the final delivery and checkout phase, we have to pay practically

the full amount with the only difference that we didn't take delivery of products that anybody could use. So I honestly believe that it is simply too late to consider anything like this and we would be talking about a few percent total saving of the entire program; nothing more.

I think the damage that would be incurred by such a termination should be assessed.

I think probably the greatest damage will be done to the international stature and image of the United States by reneging on a goal that, after all, was received by the world as a very inspiring idea, and to give up on this commitment now that we are coming into the final stretch would really, in my opinion, be construed by many people as just throwing in the towel, as meaning the United States is no longer willing or able or ready to do what it set out to do, maybe because of so many other problems it has, but at any rate, it will be interpreted as a great sign of weakness.

EFFECT ON INDUSTRIAL BASE

Secondly, I think it would be wrecking our industrial base that we have established for the Apollo program, and this industrial base would be needed for any other space program that we may take up instead, such as an orbital resources program or an orbital program in support of science—anything like that.

In a way, what goes for the people at large also goes for industry. When the announcement was made and Congress accepted President Kennedy's original proposal to land a man on the moon in this decade, this was also accepted by industry as an act of faith and industry itself committed itself very strongly to this objective. If the Government would now tell industry that this objective is no longer valid, the willingness of industry to risk their own funds for new ventures would be greatly impaired and I think this damage would be felt in many, many other areas outside of the space program.

I think a very typical example of the effect of this lack of faith or running out on the original commitment would be with the astronauts. You have a group of, I believe, 65 young men now, who entered the astronaut program with great enthusiasm, who dedicated their lives to this cause, who have been through some gruelling training in the process and who know, of course, full well when the day comes if they are to fly they have to lay their lives on the line.

Now, to tell these people all of a sudden the whole thing was a mistake and we don't really mean to all these things would again be a case of running out on some of he finest men in this country. And at the same time I think it would also be interpreted by many people not in the astronaut program that it doesn't seem to be a very good idea to really dedicate your life to a worthy cause. I think it would be an item of indirect damage.

OTHER NATIONAL CONSIDERATIONS

Mr. TALCOTT. I don't like to appear irreverent to these people, but their's seems to be an astounding statement too. We have programs for unpolluting waters, to relieve poverty, to provide medical care

for everybody, to provide social security for everybody, to provide education and training for everybody, to build an Interstate Highway System. We have many national commitments that were made long before we said we would go to the moon in 1969. I am astounded that these men put their special project ahead of everybody else's. This is an alarming attitude to me. I am in favor of the space program, but it is shocking that they are so concerned with their 65 astronauts, when we have a couple million men in our military service and some in Vietnam who are getting their necks blown off every day, and you put your 65 astronauts ahead of them.

Also we have deficit financing and many other worries. These are considerations which these men should also be concerned about.

ALL-UP SYSTEMS TESTING

Mr. WEBB. Mr. Jonas did ask one question there that I would like to have 1 or 2 minutes on.

Mr. Jonas, in answer to your question as to whether the country would be better off if we had accepted the pressures to reduce the program earlier, I would like to say just a very few things. First of all, 10 years ago, when Sputnik had shown us the tremendous impact that the opening-up of this new environment could make on the mind of man, and when our military services were deeply concerned—I believe more deeply than they are today—about the unknowns that might be presented to us that would affect our position in the world, a program, a means of development, was conducted which required the flying of each individual unit to test it out fully before you proceeded to the next step.

Our original plan, on which we spent a large amount of time, was to fly the individual segments in accordance with the best known practice at the time. When the Congress did reduce the 1964 budget by over $600 million, we had a serious choice to make. Dr. Mueller had just arrived on the scene. He had examined the engineering concepts and the methods the manufacturers were utilizing to build the spacecraft. He, in effect, validated the engineering system and the capability and said, "The only way we can proceed within the limited funds is not to go stage by stage, but to fly the whole system together in the all-up systems test configuration."

I testified in this committee that the early flights would be more risky but that we would make more rapid progress in perfecting the entire system and we were prepared to accept the risk. We made our budget estimates that way the following year and they were substantially accepted in the Congress.

REDUCTION OF 15 SATURN V'S TO 9

There have been other cuts that have forced us steadily backward from the ability to fly the 15 Saturn V's in this decade. We are now down to nine. We could have more rapidly proceeded with these flights in these time spans if these cuts had not been made. I would like to state for myself that the committee was wise to follow the resistance that we gave you in the years up until last year, because at the time this

budget was before you last year, you were in the position where you made the cuts on the things to follow Apollo which had not gotten underway and left us——

LANDING PROGRAM NOT REDUCED

Mr. EVINS. There is the point I wanted to emphasize, Mr. Administrator, that this committee has not cut the lunar landing program. The reductions have been made in the post-Apollo program. If there has been any delay in the lunar landing program, it has been caused not by the appropriations provided by Congress, but maybe by the tragedy, or other developments.

Mr. WEBB. But it was NASA's determination to proceed, and our ingenuity in finding ways to accept different ways of proceeding, as we made progress and learned more that in fact made the committee and NASA able to go forward and maintain the goal.

Under the previous plan, the goal would have been put far into the future by the cuts that were made.

Let me say I think the committee did a perfectly wonderful job for the country in letting us proceed to plan in 1961 for a vehicle which appeared capable of doing the lunar landing, and then take those things and apply them to make the Saturn system better, the Saturn V.

I think we have had a wonderful relationship, but in my view it would not be correct to say that our resistance to cuts have in fact hurt the program, have put us in a worse position today than we otherwise would have been in. That is the only point I wanted to make.

Mr. JONAS. We have discussed this privately and I think in the committee. I happen to believe it was a mistake for anybody to undertake to commit this country to put a man on the moon in one decade. I think it would have been much better to say, "We have established a goal of putting a man on the moon when we can do it, within the limit of our resources, and proceeding with all of our other problems and commitments.

I think we got ourselves in a box by pledging, not to the world—and it is not a commitment to anybody—Dr. von Braun; it is a commitment, if one was actually made, to ourselves; and those who have a right to make a commitment to themselves have a right to uncommit because there is nobody concerned except ourselves. We didn't sign a treaty with anybody or make any commitment that anybody can hold us to, but that is water over the dam. The announcement was made and we started out on a crash program and that is where we made our mistake.

We are now in a fiscal crisis today that did not suddenly come upon us. We have been moving toward it for several years and it doesn't give me any satisfaction to say to you or anybody else, "I told you so," but I had the feeling that we were approaching this crisis. I don't think a government can continue to spend more money than it takes in indefinitely and remain sound financially. I think we ought to live within our means and use our means for this program and the others that my colleague from California has mentioned.

And the point I really want to make is, I think you would have been better off, you could have had better planning, it would have been

more efficient, and the country would have been better off if we had had a more modest program that we could live with and wouldn't have to cut by $1,300 million a year. I can understand how that is going to disrupt your organization and your people. That is too big a cut, and it would not have been necessary if we had been willing to have a more modest program that we could live with. That is where we have differed in the past. I have not tried to kill the program but to keep it at a level the country can afford in view of our many other commitments.

FUNDING FOR DOD SPACE EFFORTS

Mr. EVINS. Dr. von Braun made a couple of points that I think are worthy of repetition. Among the other things, he said we have a chance of doing irreparable damage by, as he said, "wrecking our industrial base." I wanted to add that they did not cut space for defense at all, but they cut space for civilian purposes.

From the President's report to the Congress on the U.S. astronautical program, we find that the defense space appropriations go up whereas the appropriations for the civilian agency have been cut. Look at the chart on F–1 of the appendix. It shows Department of Defense appropriations have been going up and for 1969 it is estimated to be $266.4 million over last year, whereas NASA is cut $227 million, with a total of $6,646.1 million, a $45.1 million increase.

The overall total space budget for 1969 is shown by this report to be a $45.1 million increase over the preceding year, Government-wide.

The cuts were made in the civilian program but not in the defense program. This only poses a proposition of going under the Department of Defense where you can receive appropriations for large items. This is one of the dangers I foresee.

REASON FOR SPENDING INCREASES

Mr. WEBB. Mr. Chairman, could I make a brief comment?

Mr. EVINS. Yes.

Mr. WEBB. The increase in expenditures in areas like the Department of Defense are similar to those in the Weather Bureau and in the Comsat Corp., as they begin to use the technology that comes out of very advanced work, such as is done in NASA.

The expenditures in aeronautics in defense grow rapidly after we make a major breakthrough in respect to either new aeronautical structure capabilities or new propulsion capabilities.

This is a trend that I believe you will see, and in essence this is the beginning payoff of the investments that we have made; and if the Department of Defense should desire a SATURN V launch payload, then the cost of that SATURN V will show up in the Department of Defense column here.

So you are seeing the Defense Department weigh what they get for their money spent in space systems as against their other needs, they find that investments in space are worthwhile and they are increasing them.

Mr. EVINS. DOD is capitalizing on NASA's research and experience; is that right?

SUPPORT FROM COMMITTEE

Mr. WEBB. Our job is to develop space capability and they can use it. They are a ready force. They really don't have the capability, as a ready force, to pursue persistently things like reentry physics, for instance, in the same way that we do.

I would like to say one other thing, Mr. Chairman, with respect to Mr. Jonas' statement. I mean very sincerely my appreciation to him and the other members of the committee for giving us the support which this committee has given us. I think the fact that the committee was prepared to accept our judgment that we should not go forward with the larger Nova, but proceed with the SATURN V was a very important decision that will have great value to this country for a long time.

Second, I believe the support this committee has given us to proceed with the effort to make the lunar landing in this decade, with the alternate systems concept, and with the basic change from the previous system was a very important element within which the executive and legislative branches went forward together. I think Mr. Jonas has indeed shown great wisdom in supporting the fact that we were prepared to maintain the goal at something that was attainable by a new means even with the reductions which related themselves more to the fiscal situation of the country than to what Congress thought we could accomplish in space. This was an important element, and the country will benefit from it for a long time to come.

PROSPECT OF HIATUS

Mr. JONAS. May I make this statement right there? I think one of the real problems you are going to face is that as you cut back on the applications you are going to have a hiatus. That is what you told us last year when you were supporting the applications.

Mr. WEBB. Yes, sir.

Mr. JONAS. You will be marking time. You will have to crank up again to get your applications program in full gear; is that not right?

Mr. WEBB. Yes, sir.

Mr. JONAS. I say that in support of my contention that it would have been better to have had a stretched out program that we could maintain?

You get in trouble when you go down a billion three under 1966. That is too big a cut to have to absorb and maintain momentum. I would have rather been starting out in low gear until I was ready to get up there.

Mr. WEBB. Mr. Jonas, in adjusting to things that had to be done for fiscal reasons rather than what we could build in the way of hardware, I think it is important to recognize that the state of the art has been moving very rapidly. At the same time that we adjust to the present situation of having a hiatus in applications, we and the Department of Defense will take the latest knowledge of technology and apply it to the new payloads. So, in fact, I believe we will have better payloads when we resume flying than we would have developed had we continued. So it is not exactly black and white or a clear-cut

issue as to exactly what results when you slow things down. I think it is very important to recognize that although it has cost us time and a large amount of money to build a block–II Apollo spacecraft after the fire; nevertheless, it has many improvements in it that would not have been in the system going to the Moon had we not taken that time and money. So far as the outlook for the United States is concerned, we are still moving forward. We are still in momentum.

We are still developing the capability that will permit us to move rapidly to the newer things when they come. But we are not doing it on an orderly, forward-thrusting, and more or less level basis. We are doing it through the ups and downs that you have expressed your concern about.

OVERCHARGES IN PURCHASES

Mr. EVINS. We know with the large program that you have problems and difficulties. One of our colleagues has placed in the record information which points out that the Defense Department has been seriously overcharged for certain items, and now he says it has been extended to NASA. This is March 5. I know you are aware of it. He says that NASA has engaged in some questionable overcharge practices.

For instance, at Goddard you paid $32.90 for a dial once listed in the catalog for $3.29. This is 10 times what they charged at private firms. Then he says in another month at Kennedy you paid $72.90 for couplings listed in the same catalog for $13.99. At Goddard you bought an item, a clutch, for $44.45, an overcharge of $30. At Marshall you have a number of invoices. One is for $370.80 for an item listed at $162.

I hope you will look into these instances cited here of overcharges in purchases and procurement.

Mr. WEBB. We are doing that, Mr. Chairman. The procurement function operates under Mr. Harold Finger. He is here today. Could he give you a brief statement on this so it appears with your statement?

Mr. EVINS. I think it would be appropriate.

Mr. FINGER. Mr. Chairman, there are indications that at the lower procurement levels, those levels at which we purchase parts through normal purchase order rather than contracts, there have been some charges that were not consistent with catalog price values. For example, the citation indicated in Congressman Wolff's statement of a $72.50 charge on a coupling with a catalog price of $13.50 is correct. There is a request for reimbursement of that difference. The original comments that were made by NASA on this subject indicated that over the past 2 years there have been no contracts between any NASA installation and this company that was referred to. Contracts apply only to purchase values above $2,500. So these lower cost items are in the purchase-order-level categories. We are examining them to assure that there is no situation like that that persists.

NUMBER OF ITEMS PURCHASED

Mr. EVINS. Could you give us a round figure for the record at this time as to the number of items purchased so you can show the percentage of overcharges as against the volume of purchases?

Mr. FINGER. As an example, I can give that at Goddard. There were a total in a 2-year period of 10 orders. They totaled $3,000.

Mr. EVINS. I am talking about the number of items you purchased from list overall.

Mr. FINGER. There are many, many thousands of parts. For example, at Goddard alone there would be something like 20,000 orders a year in the category of these low-purchase-order levels. In total we had almost 180,000 purchase orders accounting for almost 80 percent of our procurement actions in fiscal year 1967, and only about 17 percent of our procurement dollars.

The particular company in this case sold about $3,000 worth of items to NASA over a 2-year period.

Mr. EVINS. You have a purchasing agent at each one of the installations.

Mr. FINGER. Yes.

Mr. EVINS. They are instructed to look at these sharply and keep the price down.

Mr. FINGER. That is right.

Mr. WEBB. There is a cost-auditing function going on in order to correct errors that have come in through the ordinary process of doing business.

Mr. JONAS. Congressman Wolff does not give the year of these purchases. When was this?

Mr. FINGER. 1966 and 1967.

Mr. JONAS. Why didn't your audit catch these things?

ITEM DISCOVERED IN POSTAUDIT

Mr. FINGER. Many of these are postaudit items. The $72.50 item was procured in the middle of 1966.

Mr. JONAS. But your audit did not uncover it.

How was this discovered?

Mr. FINGER. It was discovered in a postaudit review of these orders.

Mr. JONAS. How can it happen that a purchasing agent would not refer to the catalog and give a contract for $72.90 when the catalog lists it at $13.99?

Mr. FINGER. He accepted the contractor's stated catalog price that was submitted as part of the response to the bid request rather than actually looking at the catalog himself, apparently. I understand the catalog was not available to him.

Mr. JONAS. Was this a low-level employee, a subordinate?

Mr. FINGER. At this purchase-order level it would be a low-level employee.

Mr. EVINS. This particular supplier did gouge the Government and I would hope they will not look with too much favor on his subsequent offerings.

Mr. FINGER. I did mention to Mr. Jonas that the total order in that case was for two couplings at $140. There is a request for reimbursement on that order.

Mr. TALCOTT. Who caught the error? Did you catch it?

Mr. WEBB. Did this show up in the GAO audit or did our own auditors find it?

Mr. FINGER. No; this was not found in an internal NASA review. I would point out that our own examination of the matter at the headquarters level was in response to Mr. Wolff's comments. We do, however, make surveys of procurement activities without regard to dollar

levels on a spot check basis. The NASA field centers have contracting authority and responsibility up to certain dollar limitations in the various categories of procurement activities. Their staffs include professional procurement officers and legal counsel for such actions.

REDUCTION IN FORCE AT HUNTSVILLE

Mr. EVINS. While we are wrapping up some of these various press matters, here is another thing that is called to our attention.

The court blocks NASA firings and downgrading of civilian employees at Huntsville, Ala., facility. Judge Holtzhoff accused NASA of being callous and inconsiderate of its employees by giving them layoffs at the Christmas holiday period.

Mr. WEBB. I think either our general counsel, Mr. Dembling, or Mr. Finger, who is in charge of the Office of Organization and Management can speak to that, or I can, as you prefer.

Mr. EVINS. Let Mr. Finger or Mr. Dembling speak to this.

Mr. FINGER. Mr. Chairman, the NASA appropriation that reduced our AO budget was passed in October of last year. It was necessary to move very quickly in order to effect the reductions required by that appropriation. At that time, in October, the staff at the Marshall Center was informed of the possible need for a reduction in force and they were also briefed on that reduction in force in November. Separation notices were issued on December 3, 3 weeks before Christmas, with an effective date of January 13. Such an action is not desirable, but we had no choice but to move as rapidly as possible to bring our personnel complement down to what was required to stay within the appropriation. The cost of maintaining those people identified in the reduction in force on our rolls was approximately $100,000 a week at the time the preliminary injunction was granted.

Judge Holtzoff's ruling did not relate to the matter of contract legality. He did enjoin us from proceeding with a reduction in force until NASA and the Civil Service Commission came to an agreement to assure that the rights of the personnel affected by the reduction in force were not being violated.

Mr. EVINS. Did he say you could lay off contract employees but not civil service employees?

Mr. FINGER. No, sir; he did not rule in any way on the contractor versus civil service employee relationship, although the request for the injunction made by the union did rely primarily on the opinion that was issued by the General Counsel of the Civil Service Commission, which indicated certain contracts at Goddard were operating in a manner proscribed by Federal personnel statutes.

So they did rely on that opinion. But Judge Holtzoff indicated that his determination for a preliminary injunction did not relate to the question of contract legality, but did require that the rights of the employees be safeguarded. Therefore he was requiring agreement between civil service and NASA on that matter.

BACKGROUND OF SERVICE CONTRACTS

Mr. WEBB. This is too important to leave with this committee without a little more discussion. Back about some 10 or 12 years ago a decision was made that where the Federal Government could utilize

contractors, utilizing the resources of private industry, and the costs were no more than 10-percent higher, it was a better way to do business. It permitted you to go up fast and go down fast and not be involved in the rigidity of certain of the Civil Service requirements. We have followed this in our own contracting practices probably to a larger extent than most agencies because we were going up and we were not sure where we would ultimately peak or level off.

This ruling has been reissued by the Bureau of the Budget. Within the last 30 days or so the Bureau of the Budget reaffirmed this as a basic national policy. As these various agencies began to use contracts, which total maybe as much as $4 to $8 billion a year, total throughout the Government, certain questions were raised as to the relationships between contract employees and civil service employees. There were certain legitimate concerns on the part of the Civil Service Commission as to persons doing relatively the same work with some civil service employees subject to all the conflict of interest statutes and others working side by side being contract employees not subject to these statutes. As the matters began to be investigated and examined between the GAO and the Civil Service Commission, I believe, and I may not be completely correct about this, that at some point the Civil Service Commission, or certain officials in it, decided that somehow, some way this practice must be curtailed, that it was in fact not a proper way for the Government to get its work done.

Now when they began to audit the Goddard contracts, they found two of them that they could legitimately criticize, but I do not believe they were illegal. The criticism related to whether civil service people were furnishing day-to-day supervision of contract employees, and this is a proper concern of the Civil Service Commission. But in finding those contracts, as they stated, illegal, their lawyers proceeded then to say that all such contracts which may in certain ways even resemble these are also illegal. This in my view was a policy statement couched in the form of a legal opinion.

INJUNCTION OBTAINED

When our employees, being laid off under the reduction in force that was required of us by the reduced appropriations, saw this opinion of the General Counsel of the Civil Service Commission, they asked the Court for an injunction, saying that the contracts through which we were utilizing other employees were illegal, and therefore that they should not be laid off but should be retained to perform the work that the contract employees were doing.

I think the judge, without realizing the total sweeping nature of this particular matter, engaged in the language in his opinion that you have read.

Mr. EVINS. Many people think the Court has been making a lot of bad decisions lately.

CONTRACTS EXTENDED 1 YEAR

Mr. WEBB. NASA operates responsibly in these matters. When these matters began to be raised last August, I proposed to the GAO, the Bureau of the Budget and the Civil Service Commission that we

organize a joint effort of high level officials to examine the work being done. The formal contract or what somebody thinks about it is less important than how the Government gets its work done.

I proposed that we go to Cape Kennedy and examine the contracts worth $35 million, which were up for renewal. I extended the contracts for a year so we could make a joint examination of the work and decide how better to get the work done. This dragged on and the general desire on the part of the Civil Service Commission, it seemed to me, was to declare those contracts illegal without examining the work. At that point I determined on an independent course for NASA and decided to go into the courts independent of the Civil Service Commission. At that point they began to really examine the position that they would be in with an obiter dicta basis for this injunction. At that time we all agreed that we would get together and look at the work and that is going on now.

I do not think that the language, as the judge was quoted, was proper.

Mr. EVINS. Do you think the contracts should be performed by Government employees or with private industry contracts?

Mr. WEBB. If we had civil service workers doing much of this work that we have used contract employees for we would never have been able to lay off 140,000 employees in the period we have.

Mr. EVINS. Gentlemen, suppose we take a recess until 1:15.

AFTERNOON SESSION

Mr. EVINS. The committee will come to order, continuing our discussions on the appropriation requests of the National Aeronautics and Space Administration.

NASA INTERNATIONAL PROGRAMS

Mr. Administrator, I was impressed and I want to make reference to this chart, National Aeronautics and Space Administration's international programs. This is a chart dated January 1, 1968. I will not put it in the record, but I notice certain statements indicating that a number of countries have entered into the agreements or cooperative contracts on projects with NASA. This is shown to be 20 countries. Also, 25 countries, according to this chart, have entered into cooperative agreements on tracking and data acquisition.

Total countries cooperating in some form with the United States in NASA programs are 63. This would indicate that you have a great deal of cooperation. Would you elaborate on this for the record?

Mr. WEBB. Mr. Willis Shapley is in charge of this whole area of NASA.

Mr. SHAPLEY. Yes; I think the figures you cited there are indicators of the scope of the international cooperative programs that NASA has built up over the years.

These agreements vary in kind quite widely from just the exchange of scientists to a few full-blown agreements for satellite programs, such as the one Mr. Webb mentioned this morning, in which the French in a joint project, a project of great interest to us as well as

to the French, are paying about $40 million of the cost and we are paying up to $3 to $4 million. Most of the projects are much smaller than that, and in general NASA is not paying money to the other countries in any form. We provide equipment and capabilities, small rockets that we have. They provide the scientific payloads and do the work and the results are available to both countries. This is a very useful extension of our program, getting scientific and other knowledge for the United States at the same time that we build a bridge of partnership with other countries who wish to cooperate with us.

UNITED STATES-U.S.S.R. COOPERATION

Mr. WEBB. I would like to add we have certain cooperative arrangements with the Russians. Space is one of the few areas where it was possible to deal with very specific projects where we would agree to do our part and they theirs, without having to have some overall framework or broad statement of cooperation. One of the most advanced efforts we still have some difficulty with was the construction of a so-called cold line between Washington and Moscow over which we would exchange weather pictures and data pertaining to weather observations from space.

There has been data put on this link by the Russians. On the other hand, it has been sporadic. We had hoped by this time it would become a regular exchange and might lead on to other things.

We specifically have agreed to publish certain data with respect to the effects of space on man, and the general area of how you put men into this hostile environment. Here we have a joint group to look at the contents of the volume to be published. We have agreements as to what subjects are going to be written on. In general, we are trying to get a publication that represents the best that we both have known. This is moving ahead, but not without its difficulties.

So there still is some considerable hope that we and the U.S.S.R. will find some cooperative ventures that will be particularly useful. Most of the efforts have not moved rapidly.

WORK STILL IN PROGRESS

Mr. EVINS. I notice in examining this document that most of the cooperative arrangements seem to have been in past years which have been consummated. How many are envisioned in the future?

Mr. SHAPLEY. I believe the document you have here lists both projects that were executed in the past and work that is still in progress and is very active.

Mr. EVINS. What do the dates indicate?

Mr. SHAPLEY. The dates indicate either actual or anticipated date of project accomplishments. I mentioned that many agreements with many of those countries are still active and going forward. I have mentioned the French one. In the case of the Canadians, this has been a very successful arrangement where, by a coordinated decision, the United States decided not to have a scientific satellite program to examine the ionosphere from above and instead decided to leave this field to the Canadians. We assist them in the launching of their satellites. This has been one of the most successful satellites. It just completed over 5 years in orbit with useful data.

COOPERATION WITH FRENCH

Mr. EVINS. Page 17 shows your agreements with France.

Tell us about them?

Dr. NAUGLE. All of those sounding rockets—the four Aerobees were all flights that were part of the joint satellite program. These were to test instruments that were to be flown on the satellite. They were all for studies of the ionosphere and electron density.

Mr. WEBB. These were later flown on the satellite successfully. The large program for the future with the French has to do with having balloon monitoring of the winds around the earth with the data collected by a satellite.

Mr. Chairman, we have worked out many very successful sounding rocket programs, where simultaneous launches occur around the earth.

We are working now to get payloads out of the International Sounding Rocket Range in India, which was dedicated last month. This is another project in which the U.S.S.R. and the United States have both contributed equipment, to this international launching facility, which has been endorsed by the United Nations. So there is forward thrust in the international cooperative arena. But there is much concern about the cost and long leadtime of the larger payloads for the larger rockets.

OVERALL NASA BUDGET

Mr. EVINS. Let us take a look at your overall budget. Research and development for 1968 is $3,925 million. For 1969 it is $3,677,200,000, which is a reduction in research of $247,800,000 for 1969. Construction of facilities, however, goes up from $35,900,000 to $45 million, which is a $9,100,000 increase. We will look into your construction projects later.

Administrative operation shows a big increase, from $628 million in 1968, to $648,200,000, which is a $20,200,000 increase over last year.

Your programs have tapered off somewhat, but your administrative costs have increased.

Mr. WEBB. Mr. Lilly was going to cover this with a statement as you requested. We can discuss this now on the basis of your question, or he can give the full and complete statement for administrative operations if you wish.

Mr. EVINS. He might tell us why you need $20,200,000 more and 305 more jobs next year.

REASONS FOR ADMINISTRATIVE OPERATION INCREASE

Mr. LILLY. Yes, sir. First, I would like to review a little bit if I could, Mr. Chairman, the 1968 program and how our 1969 program evolved from that, carrying out the same austerity that we exercised in 1968. Mr. Webb stated this morning the guidelines against which our fiscal year 1969 budget was prepared and that our total budget request for 1969 was $4,370,400,000.

Of that total amount, Administration Operations is $648.2 million in 1969. Within the appropriations for Administrative Operations we have developed the in-house capability to plan, integrate, and manage the total research and development effort and to provide the support

necessary to operate, maintain, and effectively utilize the physical plant capability. All of the salaries and benefits of the NASA personnel who manage this research and development program and maintain the facilities are provided in this appropriation. The requirement for personnel and benefits account for 68 percent of the total appropriation request.

As in other areas our Administrative Operations budget estimates for 1968 and 1969 reflect the direction of the Congress and the President to reduce our rate of expenditures to a minimum.

To put the 1969 budget estimate in some perspective, I would like to briefly discuss the evolution of our 1968 plan and to indicate the adjustment in our operations that have been necessary at these reduced levels, and to show how the continuity of these actions are carried through to the budget request for 1969. Our request in fiscal 1968 was $671.3 million. Congress authorized $648 million and appropriated $628 million, a reduction of $43.3 million from our request. In compliance with this action of Congress and the direction of the President to minimize expenditures, adjustments to our employment levels and operations were effected to reduce our operations to a level which could be supported at $628 million in fiscal year 1968, and continue on into fiscal 1969. We immediately placed a freeze on hiring of new employees; this was on August 24, 1967.

Based on our analysis of the impact on manpower requirements resulting from the reduction in the research and development programs and the level of employment which could be supported at a reduced total budget level, we directed a reduction of 1,704 civil service positions. That was taken throughout all of our centers with one exception. That was the Kennedy Space Center where we did allow a staffing increase of 211 positions which was necessary to meet the requirements of the Apollo launch schedule. Other than this, all NASA installations were reduced below the budget plan. We first applied the reductions where research and development programs were eliminated or reduced significantly. After these specific reductions, it was still necessary to reduce the personnel at each installation between 4 and 5 percent in order to operate at the appropriation level enacted by Congress.

REDUCTIONS IN PERSONNEL

To the greatest extent possible, the reductions are being achieved by leaving vacancies unfilled until installations reach their lower authorized strengths. In cases where the reductions cannot be effected by attrition, part of the reduction must be accomplished by involuntary separations. To minimize the impact of this action, outplacement programs were established and every effort has been made to place these employees at other locations where their skills could be utilized. As you are aware, NASA has been temporarily enjoined by the U.S. district court from implementing the reduction in force of Marshall Space Flight Center. However, we have arrived at an agreement with the Civil Service Commission that we and the U.S. Attorney believe provides a basis for vacating this injunction.

In addition to the personnel reductions, all possible actions were taken to reduce other supporting costs in the "Administrative opera-

tions" appropriation. For example, significant reductions were made immediately in paid overtime. The level now planned is at its lowest since fiscal year 1960 when there were 20,000 fewer people on the NASA payroll.

PAID OVERTIME 1½ PERCENT

The paid overtime rate at this point in time is just slightly over one and a half percent.

The travel fund in our 1968 budget for the direction and coordination of our contractor and other program activities and operational travel to the launch sites was reduced by 15 percent.

The level of funding for contractor services, supplies, equipment, repair, alteration, and minor construction, and rental and operation of ADP equipment was reduced 17 percent. We used these same measures that were required in fiscal 1968 to operate at a $628 million level and have carried forward that same level in fiscal 1969.

The base budget for both 1968 and 1969 has been held at the $628 million level and adjusted only for the actions that were beyond the control of the agency.

I might point out before I move any further that the numbers that you were reading from, Mr. Evins, in volume I, show the appropriations in fiscal 1968, as being $628 million, and our request in fiscal 1969, as $648.2 million. The number in 1968 is the appropriated amount and is not our budget plan.

PAY RAISE ADJUSTMENTS

This $628 million has been adjusted for the pay raise which took place in December of last year and made effective in October. So starting with the $628 million level, we adjusted first for the first increment of the 1967 pay act which was in the amount of $12.5 million. In addition, we adjusted our 1969 level by the $18.6 million which would be required for full year funding on the first increment.

OTHER ADJUSTMENTS

In addition, we added $1.6 million in the fiscal year 1969 request to cover certain effort under three support contracts at Goddard Space Flight Center, which the opinion of the General Counsel of the Civil Service Commission had indicated should be performed by civil service. The only other adjustment in the number was about a $100,000 transfer in fiscal 1968 to the GSA to pay for rental space.

Mr. JONAS. Would you yield right there?

Mr. LILLY. Yes.

Mr. JONAS. My figure shows that as $127,000; and $12,373,000 you call a transfer or you call an adjustment, is a transfer from R. & D.

TRANSFER FROM R. & D.

Mr. LILLY. That is correct. What I would like to say is that after the appropriation last year, $628 million, we did prepare a plan which required us to live on $628 million. This, in turn, required us to take the actions that I mentioned a while ago, including the removal of

about 1,704 positions from our rolls. After that appropriation action, and after the installation of this plan, the pay raise was enacted by Congress in December 1967, and made effective back to October. This required us to transfer $12.5 million from research and development into the administrative operations budget to pay for the salaries.

Mr. JONAS. Can you break down that research and development? What program did the $12.3 million come out of?

TRANSFER FROM LAUNCH VEHICLES

Mr. LILLY. As we told the committees of Congress when we presented our operating plan in, I believe, November of last year, we had provided money in the launch vehicle procurement account for forward leadtime funding on the launch vehicles and—as we told the committees when we briefed them on our operating plan—if it were required that we absorb the cost of the pay raise, we would take money from that account and reduce our leadtime funding on those launch vehicles. That is the account we took it from in this particular instance and it accounts for the difference between the operating plan that was submitted in a letter to you, Mr. Evins, last year and in the account now.

Mr. JONAS. Right at this point can you give us the figure that was left in that account?

Mr. LILLY. The figure that was left in the launch vehicle account.

Mr. JONAS. Yes, after deducting the $12.3 million.

Mr. LILLY. I believe it was $127 million.

Mr. SHAPLEY. $127.1 million.

Mr. JONAS. It was originally $28 million more than that.

Mr. SHAPLEY. It was originally $141.9 million.

REASON FOR TRANSFER

Mr. WEBB. In effect, Mr. Jonas, what we were doing here was adjusting, after we had been 4 months into the year, for a $500 million cut including a specific reduction in the AO. So in a sense we were making a substantial number of adjustments. I think the basic question we had to face was a transfer from R. & D. rather than to equate this pay raise increase to this particular account.

Mr. JONAS. This action was similar to action you took the previous year.

Mr. WEBB. Yes, sir.

Mr. JONAS. It was a similar transfer.

APOLLO APPLICATIONS REDUCED $65 MILLION

Mr. WEBB. Yes, sir. If you note on the Apollo applications, we reduced the amount appropriated to the amount that this committee had recommended. We reduced the Apollo applications program by $65 million, because we could not go forward with a larger program within a balanced framework.

Mr. EVINS. You reduced the appropriations in line with the actions of the Congress, and later absorbed the pay raise which Congress subsequently enacted.

Mr. LILLY. That is correct.

Mr. EVINS. Proceed.

Mr. LILLY. Therefore, we laid out our 1968 plan and 1969 plan on this base of $628 million and adjusted for the pay raise, which was $12.5 million in 1968 and about $18.6 million in 1969.

Mr. EVINS. The increase over last year stems from the $628 million base plus the Pay Act increase.

Mr. LILLY. That is correct.

NEW POSITIONS INCLUDED

Mr. EVINS. Are you including any funds for new jobs in this?

Mr. LILLY. Yes, sir; we have included 305. For the 305 there is an amount of $1.6 million of funding for the 155 people at Goddard which we are proposing to transfer to civil service in lieu of having the work done under R. & D. contracts. In addition, we have proposed 150 additional people at the electronics research center for a total of 305 increase above our personnel ceiling in 1968.

Mr. EVINS. The administrative operation appropriation reflects the Pay Act increase and the 305 new jobs.

Mr. LILLY. That is correct.

OVERTIME

Mr. JONAS. You sort of lose me when you talk in terms of percentages. I would rather think in terms of dollars. You said you have your overtime down now to 1½ percent of the payroll.

Mr. LILLY. Yes, sir.

Mr. JONAS. What does the mean in dollars?

Mr. LILLY. $6.6 million in fiscal year 1968.

Mr. JONAS. Over a year's time?

Mr. LILLY. That is correct.

Mr. JONAS. Thank you.

Mr. WEBB. I think you could say, Mr. Chairman, that we have accepted the decision you made of a $628 million base. We did not transfer funds from R. & D. in order to try to build up that base.

PAY ACT ABSORBED

Mr. EVINS. You are to be commended. You absorbed the Pay Act increase for last year.

Mr. WEBB. Yes, sir.

But we also accepted the committee's judgment that the base of $628 million was a correct one and did not endeavor to keep our operations above that level by transfers. We did take the pay increase out of other funds.

Mr. JONAS. You only transferred enough money to absorb the pay increase and not to expand your administrative operation?

Mr. WEBB. Yes, sir. We accepted that as the level that we had debated, gone through, had discussed at great length, and we said we must accept that and went right to work on it.

SOURCE OF TRANSFER

Mr. JONAS. You made that decision because you thought that was the best place or the place that would cause the least damage to make the transfer.

Mr. WEBB. No, sir, Mr. Jonas, we did not. What we did, in effect, was to say that under our process of Government there has to be this vigorous interchange between the legislative and executive branches; we had come out with a figure of $628 million which we did not think was the correct level. We thought we could have done a better job with more. But we thought it was better to accept that and implement it that way.

Mr. JONAS. You misunderstood me. I meant to help you, I think by letting the record show that in your judgment the best place you could make the transfer from was the place from which you made it.

Mr. WEBB. Yes, sir, absolutely. I am sorry, I misunderstood.

Mr. EVINS. Proceed, Mr. Lilly.

ADMINISTRATIVE OPERATIONS BUDGET BREAKDOWN

Mr. LILLY. Yes, sir.

Our Administrative Operations budget is presented in volume IV of the justification books that we have given you. It is presented in six major cost categories.

The base programs to which I will address some numbers are our adjusted appropriation for 1968 of $640.4 million and our 1969 request, of $648.2 million, requesting an increase of $7.8 million.

Our requirements in total are presented in six categories. The first is personnel, which I indicated before accounts for about 68 percent of our requirement. We are requesting $442.5 million. Since in 1968 we had $436.1 million; this request represents an increase of $6.4 million. Our travel was $16,500,000 in 1968 and is $16,500,000 in 1969. Automatic data processing is $31.5 million, the same as in 1968. For facilities services, there is $94.9 million, which is an increase of $2.3 million over that provided in 1968. The technical services is $18.8 million, the same as in fiscal 1968. The administrative support category is $44 million, which is a decrease of $900,000 from that provided in fiscal 1968. So that brings our total in 1969 to $648.2 million, which is an increase of $7.8 million over 1968.

Mr. EVINS. Mr. Lilly, checking your figures as you read them off, there are two items here that do not correspond to what you said. The automatic data processing you show a decrease from $31.506 million to $31.487 million. You said it was the same. It is a decrease according to the table on page AO–6.

Mr. LILLY. Yes, sir. I was just rounding the numbers. It is a slight decrease.

Mr. WEBB. $19,000 decrease.

Mr. EVINS. The next item you said was the same is also a slight decrease. Three items are decreased, and three items are increased.

Mr. WEBB. That is correct.

UNITED STATES AND U.S.S.R. AIMS IN SPACE

Mr. MARSH. Mr. Director, going back to your statement, I would like to ask you generally if this observation is correct or not. Our effort is on the scientific peaceful areas involved in exploration of space, while that of the Soviet Union is directed principally toward the

military areas, with the filtering down effect to science and nondefense sectors of space exploration.

Mr. WEBB. No, sir; I don't think so. I think we are both developing the capabilities to operate in space. We make more of an effort to develop that capability in the NASA program, with utilization of that capability by others, like the military. They tend to merge the development.

BENEFITS TO MILITARY

I did say in my statement that they have done less to explore weather and communication satellites, and to use them in systems that give an economic payback right away. There is no doubt in my mind that the work we did with communication satellites enabled our military services to have a very efficient military communication satellite system.

There is no doubt in my mind that they are developing all military options that they believe would be useful to them. So we both are developing capabilities. They must do a certain amount of scientific work in order to develop a military capability because they have to know the environment.

Mr. MARSH. Do you feel that your work does not neglect the national security aspects of our space program?

NATIONAL SECURITY NOT NEGLECTED

Mr. WEBB. No, sir. It contributes very largely to our national military capability because it is the basic scientific and technical development work. For instance, the Saturn V shows you how to use liquid hydrogen in vehicles to get very efficient performance in very large vehicles. This is an efficient fuel for any purpose you want to get big payloads for.

Mr. MARSH. Would you say, in your opinion, the work of the space program and its continued effort should be justified simply on the basis of its contribution to the national security? Wouldn't that be a sufficient reason for continuing our program at the present level?

Mr. WEBB. In my view our national security gains more than this program costs. Then we get the other benefits you referred to in addition, in my view.

Could I just mention that we have had a long history of doing this in aeronautics beginning in 1916. The basic forward thrust in high-performance airplanes and engines and control systems associated with them have come out of this kind of work, and then utilized for military purposes. We are pursuing that same way of doing things that we developed over a long period of years.

Mr. MARSH. It is my observation that the space program has captured the imagination of the American public. I also believe that they want to help this Nation keep abreast of this work in space.

The thing that concerns me is the possibility that the American public in the event that we do fall behind, and assuming that the Soviet Union does put a man on the moon, whether or not the public reaction would be. We must have a man on the moon; and urge then a crash program that would involve huge sums of money, somewhat reminiscent of what we did shortly after they launched their first Sputnik. Would you care to comment on that?

INTEREST OF THE PUBLIC

Mr. WEBB. Yes, I would, Congressman. I think when you develop the ability to use very high temperatures and very high pressures in all kinds of technical equipment, you gain a very great advantage for all national purposes. I think the great interest the public has shown in flying men, and the idea that you would land on the moon, is partly related to the desire of the human race to understand the universe we live in and go to our nearest neighbor to see what we can learn about the earth.

But it is also related to the fact that clearly shows you have a big booster which you know how to fly, and it will take a payload to the moon and bring men back. And you can hit that earth's atmosphere at 2,500 miles an hour without burning up. So the public imagination and enthusiasm is partly related to the thought of a man going to the moon and coming back, but it is also related to an underlying feeling that without this kind of an ability in our hands when another nation is developing it, we would be in serious danger of not being present when the big decisions about our future are being made.

SOVIETS LEAPFROGGING

I think you do point to a very real danger we are going to face. I have said it in my statement. There is going to be a period now in which the Russians will be able to say, "We built a bigger booster than the Atlas or leapfrogged the Saturn IB which is flying 40,000 pounds." And they can fly a booster with one and a half times the capacity right now. That is the kind of booster they used the last week or so to send an object out reportedly to lunar distances.

Presumably this is an advanced preparation for a flight around the moon, either unmanned or with a dog or some form of life in it, with a reentry into the earth's atmosphere. So they have a booster something like one and a half times the capability of the Saturn IB. We know they are building one bigger than the Saturn V. Here is this image of jumping over every booster we have.

If they use that to land on the moon and if we have no way of saying we are keeping up, I think it would have a tremendous impact and create a great demand.

NERVA I PROPOSED

In this budget the President is proposing Nerva I. Nerva II was proposed but not supported last year. He is proposing Nerva I which can substantially increase the carrying capacity of the Saturn V so that we can say we not only have Saturn V but Nerva I which permits us to reach at some time in the future the size booster the Russians are flying. We have always been a little behind them over the last several years, but we will have plans to permit us to catch up if we are in fact required to engage in a forced operation to do so. I do not call it a crash program, but a forced operation.

Mr. JONAS. Isn't it just as logical to say we are hedgehopping them? We went ahead of them with Saturn I–B. Then they are going ahead of Saturn I–B. Then we bring out V and go ahead of what they have in the immediate stage.

Mr. WEBB. If you assume that we will put men on the third flight, it will become operational after this one. I hope we can, Mr. Jonas. We are not waiting to put these into operation. We are moving as rapidly as we can with the funds we have.

OPERATIONAL SATURN V

Mr. JONAS. I thought you told us you are going to fire Saturn V before the end of March.

Mr. WEBB. Yes, sir; and that may be the last unmanned one.

Mr. JONAS. That is what I call operational.

Mr. WEBB. It disturbs me a little to consider putting a booster into the operational state after two flights.

Mr. JONAS. It is a difference in the definition of the word "operational."

Mr. WEBB. That is correct. What we are doing is conducting the early flights to make it operational with men. We believe it is good enough to put men on, but we do not think we have worked out the bugs to make it fully operational.

My judgement is that we will have to fly several flights with men on the nose of that rocket before we will have worked out all the bugs and call it really operational and fly on a regular schedule with it.

Mr. JONAS. When you used the term operational in this context, you mean when it has been tested and all the bugs are out and it is normal to fly.

Mr. WEBB. I think so. Let me say it more clearly. The U.S.S.R. still has proceeded to fly the first stage and fly it a number of times and prove it out. Then they put a second stage on it. They fly that and accomplish missions with it. Then they develop a third stage. In a sense the third stage is being tested on two stages that are already operational. We did not have the money or time to do that. We put it all together and we are flying all three stages together from the first flight onward.

The problem of making it operational was a little different. You might say that on what you call the first flight. But if you put it in terms of the ability to have an operational system based on that booster, they have jumped over us at each step.

Mr. JONAS. And then we jump over them.

SOVIETS LEAD IN BOOSTERS

Mr. WEBB. They have been flying 10,000 pound payloads now for at least 5 years, while the biggest one we have been able to fly with a man in it was Gemini at 7,000 pounds. They have already flown a spacecraft much bigger than Gemini, certainly of Apollo characteristics. They lost a man in flight. Nevertheless, they are now flying a booster that is much bigger than anything we have put men in and bigger than we can put men in until the latter part of this year. So in a sense, to put it to an operational status where they could fly it time after time, they have jumped over us. The Saturn V has jumped over the 60,000 pound booster but it is not operational.

Mr. JONAS. But it will be before the end of this month.

Did you profit any by their example in this decision?

Mr. WEBB. Yes, sir.

Mr. JONAS. Or was that all developed by our own scientists?

BALLISTIC MISSILE EXPERIENCE

Mr. WEBB. It mostly came from the experience of Dr. Mueller and others in the ballistic missile program where you had to have a production line coming along and you had to fly out the production line to perfect the rocket. Instead of doing this in stages, they concluded on unmanned vehicles that they could put it together and fly it from the word go. Even if they had a number of failures they would make more progress and it would be cheaper.

Mr. JONAS. Where along the line was that decision made?

Mr. WEBB. As to the Saturn V or the military system?

Mr. JONAS. No, as to the three stages.

Mr. WEBB. For the Saturn V?

Mr. JONAS. Yes.

Mr. WEBB. It was made after Congress reduced $600 million on the 1964 budget. We had considered this before.

Mr. JONAS. If it works, we did you a favor.

Mr. WEBB. We will have done the program at less expense than we could have done it without that process.

RATIONALE OF SPACE INVESTMENT

Mr. MARSH. Mr. Administrator, going back to the question, as you are aware with the emphasis on the development of our cities and making certain corrections in our cities and the demand for Federal funds for investment in cities, invariably the question comes up, why are you making this investment to put a man on the Moon? In light of that and the necessities that confront the committee, would be your opinion that this investment in our space program and in our manned space flight and our Moon shot are vital to the national security from the standpoint of the contributions it will make into our development of space.

Mr. WEBB. It is vital. It does demonstrate that you can do very large systems engineering, that you can in fact calculate in advance what it takes to do an all-up systems test on a Saturn V. Then you can demonstrate that your calculations were correct, that American industry can build what is required. Let me put it this way: One company, Boeing, can build the first stage, North American the second, Douglas the third, Grumman the next, North American the other parts, and you put it together and it does fly and succeed. For our cities and many of our other large problems of the future, weather modification, air, water pollution, this kind of systems engineering and management is going to be required. There is no other way to solve these large problems. We have in NASA a demonstration, a sort of pilot model of how you can do this in the open. Right now we are working with scholars from a number of universities where our graduate students are coming in and participating in the flux by which this is done, writing dissertations, and taking back to the schools of public administration what they learn so that city managers and mayors can learn.

I talked to Mayor Lindsay Saturday night about the fact that this kind of work we are doing through New York University could be of assistance and he made a note. He wanted to bring his group of

officials down here to see what we are doing that will give him an understanding of what he must do to succeed in these big projects he is concerned with.

It has a vital collateral for the national security.

COST VERSUS SAFETY

Mr. MARSH. To what extent are you on the horns of a dilemma between factors that involve cost and factors that involve human safety, particularly a decision on making some of these shots—as to whether or not they should be made with additional testing and additional flights?

Mr. WEBB. We are on the horns of a dilemma there, to the extent that we accept the risk necessary for a pilot to perform the first flight of a very high-performance airplane in order to prove that it is able to fly and able to do its job. We have evaluated the risk that it takes to make that first flight of a very high-performance airplane.

Mr. MARSH. You are not sacrificing human safety in the considerations of cost?

Mr. WEBB. No, sir. But we also are not failing to proceed to fly when the time comes to fly and all of the data falls in line. We work up a pyramid.

MAGNITUDE OF RISK

Mr. MARSH. You are taking a calculated risk.

Mr. WEBB. We are taking a calculated risk, yes.

Mr. MARSH. Similar to the type you would take in any other testing and performance of aircraft or similar type equipment.

Mr. WEBB. Of very advanced systems; not the ordinary airplane, but very advanced systems. It is about the same order of magnitude of risk.

Mr. MARSH. I have just two other questions. Are you doing all you would like to do in exploration into deep space?

Mr. WEBB. No, sir.

Mr. MARSH. The Soviets are, are they not?

Mr. WEBB. They are flying about three flights to each one that we fly to develop this kind of capability.

PLANETARY OPPORTUNITIES

Mr. MARSH. Unless you do this at certain times when you have windows into the sky you cannot do it until several years later, is that correct?

Mr. WEBB. Yes, sir. The planets come into the nearest position to the Earth only at periodic intervals which differ for each planet.

Mr. MARSH. Would you care to expand for that in the record?

Mr. WEBB. I would like Dr. Naugle, if he will, to expand on that. This comes under his direction and he has not appeared before the committee before.

PROGRAM FOCUSED ON MARS

Dr. NAUGLE. Mr. Chairman and Mr. Marsh, the planetary program is primarily focused on the planet Mars on the basis that it is the most interesting planet both from a physical standpoint and from

the standpoint that it might harbor life or be able to harbor life at some point in time. The opportunities to go to Mars occur about every 26 months. Last year this Agency brought before the Congress a program to explore Mars which consisted of a fly-by of Mars in 1971, to be followed by an orbiter and lander in 1973. The total cost of that program was about two and a half billion dollars. As Mr. Webb testified this morning, neither of those programs were approved by Congress. We now are proposing a program to explore Mars at about one-fifth the total cost of last year's proposal.

The program that we are presenting to the Congress, we believe, is sound. It is one that has been developed after careful examination with the Lunar and Planetary Missions Board. The membership of this Board is made up of a group of scientists interested in planetary investigations. The program has been examined in detail at NASA and at our centers.

We feel it is sound to plan to explore the planet Mars at the next two opportunities. We have also looked at it in terms of our experience with exploring the moon with automated spacecraft. As you are aware, we have just completed the automated exploration of the moon with the last Surveyor, the seventh in the series, and the fifth of the Lunar Orbiters. In that automated program to explore the moon we used three Rangers to get the first exploratory information about the moon—the first closeup pictures. We followed that program with a series of five Orbiters for reconnaissance. Then working with and landing at places that were chosen from the Orbiter pictures, we went ahead with the landers (Surveyors) and certified a total of eight sites as being suitable for Apollo landings. That was the program we used for the first exploration of the moon. The approved plan that we have to explore Mars consists of three fly-bys. The first of those fly-bys was flown in 1964, and in 1969 we have two more scheduled.

Those missions are already approved, authorized, and the major share of the funding has been appropriated. We are coming to the Congress this year requesting funds for four orbiters, as Mr. Webb testified earlier, two to fly at the 1971 opportunity and two to fly at the 1973 opportunity. Then we will begin the landing program on Mars in 1973 by carrying a lander along with each of the two orbiters. In the decade from 1964 to 1974 we will have had a planetary program which will have consisted of three fly-bys, four orbiters and two landers, if the Congress approves the program that we are submitting.

TITAN III TO BE USED

Mr. WEBB. There are two points that relate to your question. The spacecraft for the missions we are asking for in fiscal 1969 will weigh a few hundred pounds. Those we were planning to develop in the Voyager program would have been several thousand pounds, much more capable of being the basic kind of units we would use for a decade or two decades in the future. Also, since we are trying to work with much smaller spacecraft, we have chosen the military rockets, the Titan III rocket, to carry the payloads in 1973, rather than the large Saturn V type of vehicles.

Mr. MARSH. Let me inject here, assuming we are in a race for the moon, is there an urgency that this program be funded in this year in these appropriations requests, and from the standpoint of the

national security is there an urgency in reference to our deep space shots, and third, in reference to national security and the advances of the U.S.S.R., is there an urgency in the field of reconnaissance and weaponry types of satellites?

IMPORTANCE OF PLANETARY PROGRAM

Mr. WEBB. In my view there is an urgency to approve the Apollo funding for the landing on the moon as presented by the President—a strong urgency.

Second, with respect to the planetary program, I also think there is a strong urgency to approve it as presented, because it represents a program using the smallest equipment with which we can use and develop our most sophisticated techniques and not be out of the planetary business. It seems to me at a time that the U.S.S.R. is moving rapidly with respect to near earth work out as far as the moon, and I believe looking toward landings on the moon, for us to be out of the planetary field it seems to me would be a serious mistake.

I think there is a high urgency here. To show you the power of what these machines do, when the Ranger crash-landed on the moon, the pictures gave us 1,000 times more detail than the best telescope on the earth. When Surveyor landed on the moon its information gave us data 1,000 times more detailed than the Ranger. So if you multiply those two the Surveyor gave us a million magnification of what we had been able to get from the earth before. This kind of large leverage with respect to information out at the planets and the solar system within which we operate is very important for design of any system, communication satellites, weather satellites, military systems, whatever you may wish. Thirdly, I think the best I can say about the military priority is to point to what the chairman has already put into the record; namely, that the request is for $2,200,000,000 this year, at a time when we have many other heavy military requirements.

Mr. WEBB. Would you let me add to that the relationship between the Surveyor and Ranger IV?

Mr. JONAS. You just said we had a million times more exposure.

Mr. WEBB. We had that much more detail.

Mr. JONAS. I want a practical statement of what we find from that and what more we know about the moon than we did before.

Mr. WEBB. We will do that.

The fact that the President has recommended this program, seems to me, indicates that it is a matter that should be considered as a very high priority.

INFORMATION FROM SURVEYOR

Mr. JONAS. Put in the record a statement showing what more we know about the moon after Surveyor than we did after Ranger.

Mr. WEBB. Yes, sir.

(The requested information follows:)

Rangers VII, VIII, and XI crashed into the lunar surface at 6,000 miles per hour, taking pictures down to the instant of impact. These pictures showed many features in the impact area that could not be seen through telescopes, but gave no direct information on the physical and chemical characteristics of the lunar surface. Such information is essential to insure that Apollo spacecraft will be able to land on the moon safely and that men will be able to explore the lunar surface. Such information is also necessary to increase our scientific knowledge of the moon and provide a firm foundation for future exploration.

Surveyors I, III, V, VI, and VII successfully landed on the moon and operated on the lunar surface. These landings have (*a*) demonstrated and verified a new technology required for soft-landing spacecraft on the moon, many elements of which are incorporated in the Apollo system and (*b*) provided a wealth of new scientific and engineering data about the moon which could be obtained only on the lunar surface.

These missions demonstrated that a number of areas on the moon are suitable as Apollo landing sites. Specific data on the strength of the lunar surface, its resistance to rocket exhaust blasts, and its chemical composition have been obtained. Details of the lunar topography including features such as craters, rocks, and ridges have been examined by the surveyor cameras, as has the texture of the lunar material, including its fine-grain structure down to details one-fiftieth inch in size. During each landing the radar reflectivity of the surface was measured and found compatible with Apollo requirements.

New measurements of lunar surface temperatures have been obtained from landed surveyors. These spacecraft have also provided a variety of astronomical observations and have detected laser beams from the earth, with only 2–4 watts of power, opening the way to revolutionary communications techniques, and methods of determining the orbit and librations of the moon with great precision.

Much of the technology developed by Surveyor, in addition to its use in Apollo, will doubtless find application in the exploration of the other planets of the solar system.

LUNAR FAR-SIDE CHART

Mr. EVINS. There has been provided for the committee a lunar far-side chart, which looks like pictures have been taken of all the surfaces of the moon with a few exceptions. Would you tell us what this chart shows in the way of achievements?

Mr. WEBB. Could I ask Dr. Naugle to do that?

Dr. NAUGLE. What you have is a picture of the far side of the moon. Prior to the time we flew lunar orbiters there was no way for us to obtain pictures of the back side because the moon always has the same side facing the earth. With the orbiters we were able to take photographs from which this map has been made of the far side of the moon. We now know in detail what the features are.

LUNAR SURFACE PHOTOGRAPHED

Mr. EVINS. How much of the surface of the moon has been photographed? This does not depict the entire surface. I understand later that you have probably photographed all of the surface of the moon.

Dr. NAUGLE. We have photographed the entire lunar surface now.

Mr. EVINS. The chart has been completed.

Mr. WEBB. We had to use a little of the Soviet data to complete it, using 98 percent of our data and 2 percent of theirs.

Mr. EVINS. I thought the Soviets would use some of our information to complete their picture.

Mr. WEBB. Yes.

Mr. MARSH. Did you give them that information?

Mr. WEBB. Yes; it is published like this.

Mr. EVINS. How many photographs does this exhibit represent?

PICTURES OF THE MOON

Dr. NAUGLE. We have taken about 90,000 pictures of the moon. Exactly how many went into making this farside map, I would have to provide that for the record.

(The information follows:)

Fifty-six photographs from the Lunar orbiter were used to make the lunar farside chart.

SOVIET SPACE PROGRAM

Mr. MARSH. To what extent are we doing their research for them?

Mr. WEBB. We are basically under a program that was established in the 1950's that science would be free and open and the result would be published. If we flew an experiment for a foreign scientist, he is given the right to publish the results. He cannot withhold it; if he does not publish it, we will publish it. But it is to be thrown into the literature of the world for all to use, whether behind the Iron Curtain or on this side of it.

Mr. MARSH. Did you see the Soviet space program that was on one of the networks 10 days or 2 weeks ago?

Mr. WEBB. Unfortunately, I did not. My wife saw it and was much impressed.

Mr. MARSH. At the concluding moments of that TV presentation, the military director of their program said they could not make more mutual effort because the United States was, in effect, a major contributor to world tensions and, therefore, was holding back the peaceful development of outer space which in my opinion was pure propaganda. Have you issued a statement in contradiction of that?

Mr. WEBB. No, sir; I did not hear that statement, but I agree with you, it is pure propaganda.

Mr. MARSH. Would you get a copy of the statement and insert it in the record at this point and direct your remarks to the conclusion of that program?

Mr. WEBB. I would be happy to do that.

Mr. MARSH. I would be very grateful if you would.

(The information follows:)

The following comments were extracted from the concluding remarks during the television program presented by "NBC News" on March 1, 1968, entitled "The Soviets in Space."

Academician BLAGONRAVOV. What we observe in the American space program is very interesting.

Because from the purely scientific point of view the programs are identical, and this is quite natural because scientists do tend to think alike.

But in the process of solving this or that specific problem, you can follow different roads. I think that, generally speaking, the very idea of a race is harmful, because after all, all these experiments are so serious and so complicated, that they have to be so reliably prepared that any kind of haste for the sake of a race, causes nothing but harm, which can only injure science.

Space research is a problem that requires very great financial appropriations and very great effort.

If you were to try and collect all the requirements and requests of scientists and to try to put them into effect, the cost of all the necessary experiments would grow into mammoth proportions, which would be quite inconceivable, even for such powerful states as the Soviet Union or the United States.

What could prove to be difficult for one country, from the point of view of cost, would be easier to achieve if, let's say, two countries were to pool their resources so that, in principle, we are in favor of that kind of cooperation, but in order to organize that kind of joint effort two conditions are required: that is, complete mutual confidence, that's the first condition, and secondly, genuine friendship.

General KAMANIN. The kind of cooperation is possible, but it would be, I guess, hard to do that at the moment, because there is still in the world today a mutual distrust, in particular mistrust in regard to various international actions of the United States.

This cannot but be taken into account. If all these unpleasant things could be removed, then a very useful cooperation could be developed between the Soviet Union and the United States in the space field.

COMMENTATOR. Will astronauts and cosmonauts ever fly together? Not likely, not as far ahead as we can see. But more cooperation could come as General Kamanin suggested. The space powers could divide up areas of research—cutting expensive duplication. What could bring it about—paradoxically—is concern over the costs, on both sides.

Meanwhile, the space probes—American and Soviet—continue.

NASA COMMENT

As explained in detail in the following staff paper summarizing United States/U.S.S.R. cooperation in space, we have taken a large number of initiatives since 1958 without evoking substantial favorable Soviet response. The United States has repeatedly made it clear that we would welcome meaningful cooperation in projects of mutual interest and that we set no arbitrary limits of any kind whatever. If the Soviet Union really wants to cooperate, it has only to respond to specific proposals we have made or to advance specific proposals of its own.

General Kamanin is relating a persistent Soviet position when he attributes the lack of cooperation between the United States and the Soviet Union to mistrust stemming from "various international actions of the United States." In the first few years of the period since 1958 the Soviets held that cooperation in space must be limited until the achievement of "general and complete disarmament." In my view, the Soviets will cooperate when they believe cooperation is important to them. This is one reason why it is important for the United States to continue a strong effort in space. Otherwise, there will be little incentive for Soviet cooperation in the future.

UNITED STATES/U.S.S.R. COOPERATION IN SPACE PROGRAMS

Our present space cooperation with the Soviet Union had its origins in February 1962, when President Kennedy took advantage of a routine reference to cooperation by Chairman Khrushchev to put forward specific U.S. proposals for joint projects. The resulting talks between Dr. Hugh L. Dryden and Academician Anatoly A. Blagonravov led to agreements on four projects.

(1) METEOROLOGY

Coordinated launchings of experimental, then operational, meteorological satellites, establishment of channels for the exchange of data thus obtained, plus the exchange of conventional meteorological data on a secondary basis.

Status.—The communications channels were established between Washington and Moscow in October 1964 on a shared-cost basis under which each party pays $28,000 every other month. Scheduled two-way transmissions of conventional weather data are made throughout the day. Echange of satellite data began on an experimental basis in September 1966 and continued for some weeks. Soviet transmissions resumed on March 2, 1967. Although they have continued since then except for some intervals, Soviet data has not been operationally useful to us, and it has not been possible to move on to the second stage of the agreement, which calls for the coordinated launching by the two nations of a system of operational weather satellites.

(2) MAGNETIC FIELD MAPPING

Launching by each country of an earth satellite equipped with absolute magnetometers and the subsequent exchange of satellite and ground-based data.

Status.—No exchange of satellite data has yet taken place although this should become possible soon on the basis of data accumulating here and believed accumulating in the U.S.S.R. Arrangements for exchange of ground-based data have occurred but have not been compltely successful as to regularity, quantity, locations, or format.

(3) COMMUNICATIONS

Cooperative communications experiments by means of the U.S. passive satellite Echo II using the Jodrell Bank and Zemenki facilities.

Status.—These experiments were completed in February 1964. In the event, the Soviets received only, declining to transmit, but did provide reasonable data

relating to their radio receptions via Echo II. Technical difficulties (partly at Jodrell Bank) limited the experimental results.

(4) SPACE BIOLOGY AND MEDICINE

Preparation and publication of a joint review of space biology and medicine.

Status.—A joint editorial board has been selected and an outline for the chapters of the review has been agreed. The U.S. side is now engaged in having "compilers" put together the basic materials. The Soviet side may be similarly engaged, but we have no confirming word to that effect. When it is agreed that adequate material has been provided by both sides, authors will be selected for each chapter.

General

We have made repeated efforts to persuade the Soviets to enter new projects, but our initiatives have not been accepted. The joint review of space medicine is the only Soviet proposal which has been made and not subsequently withdrawn. A chronology of U.S. initiatives follows:

December 7, 1959.—NASA Administrator Glennan offered U.S. assistance in tracking Soviet manned flights. The Soviets replied that they would be in touch if the need arose.

March 7, 1962.—President Kennedy proposed an exchange of tracking and data acquisition stations. The Soviets did not accept.

September 20, 1963.—President Kennedy suggested in a speech to the U.N. General Assembly that the United States and the U.S.S.R. explore the possibility of joint exploration of the moon. President Johnson later reaffirmed this offer. There has been no official Soviet response.

December 8, 1964.—NASA proposed an exchange of vists by NASA and Soviet teams to deep space tracking and data acquisition facilities. The Soviets replied on August 13, 1965, that such vists were not then possible.

May 3, 1695.—NASA suggested United States-U.S.S.R. communications tests via the Soviet Molniya I. There was no Soviet response.

August 25, 1965.—At the request of President Johnson, Administrator Webb invited the Soviet Academy of Sciences to send a high-level representative to the launching of Gemini VI. At the same time, the President said that "we will continue to hold out to all nations including the Soviet Union the hand of cooperation in the exciting years of space exploration which lie ahead for all of us." The Soviets did not accept this invitation.

November 16, 1965.—NASA inquired about the possibility of United States-U.S.S.R. communications tests via Molniya I. On January 23, 1966, the Soviets replied that it was not possible to consider joint experiments "in the present conditions."

January 6, 1966.—Administrator Webb asked Academician Blagonravov, Chairman of the Soviet Academy's Commission on the Exploration and Use of Outer Space, for a description of experiments on Soviet Venus probes then in flight in order that NASA plans for Venus probes might emphasize experiments which could complement rather than duplicate Soviet work. Blagonravov replied informally that he did not have authority to describe the experiments.

March 24, and May 23, 1966.—Administrator Webb suggested to Academician Blagonravov that the Soviets propose subjects for discussion with a view to extending cooperation between NASA and the Soviet Academy. Blagonravov replied informally that the Soviets were not ready for further cooperation.

September 22, 1966.—Ambassador Goldberg, speaking in the U.N. General Assembly, said that if the U.S.S.R. desired tracking coverage from U.S. territory, we were prepared to discuss with the Soviets the technical and other requirements involved "with a view to reaching some mutually beneficial agreement."

March 27, 1967.—President Seitz of the National Academy of Science proposed to President Keldysh of the Academy of Sciences of the U.S.S.R. that the U.S.S.R. provide the United States with some results of the Luna 13 soil meter experiment in advance of Soviet normal reporting to the world scientific community in return for comparable data from future flights in the Surveyor series. President Keldysh replied 4 months later on July 28, forwarding data which had already been reported at the International Committee on Space Research (COSPAR) meeting in London.

March 27–31, 1967.—Dr. Kistiakowsky, during the visit of a National Academy of Sciences delegation to Moscow, suggested small United States-U.S.S.R. meet-

ings to consider such topics as cooperation in weather prediction, lunar and planetary research, and orbiting telescopes. At the same time, Dr. Brown proposed that representatives of the two academies consider joint space efforts in basic science, excluding rocketry. The Soviets have not replied to these proposals.

April 4, 1967.—Administrator Webb said in his statement on the death of Cosmonaut Komarov that NASA wished to make every realistic effort to cooperate with the Soviet Union. The Soviets have not responded.

June 2, 1967.—Administrator Webb proposed to Academician Blagonravov that they meet in July at the time of the COSPAR meeting in London to review progress in the exchange of weather data as required every 6 months under bilateral agreements. Blagonravov replied on July 3 that he had been unable to arrange for the presence of the necessary Soviet experts. The required semiannual meetings have not been held since October 1965.

October 10, 1967.—President Johnson, speaking on the occasion of the entry-into-force of the U.N. Outer Space Treaty, listed previous U.S. offers of cooperation and said, "We again renew these offers today. They are only the beginnings of what should be a long, cooperative endeavor in exploring the heavens together."

October 18 1967.—President Seitz of the National Academy of Sciences, in a telegram congratulating Academician Keldysh on the success of Venus 4, spoke of the need to further full and prompt exchange of data on planetary exploration. Keldysh's telegram of acknowledgment made no reference to data exchange.

Conclusion

We regret that the Soviets have not been prepared to move more rapidly and more broadly. Consistent with the stated objectives of three Presidents, we have made continuing efforts to interest them in specific projects. It has been made plain again and again that we stand ready to explore any and all possibilities for meaningful cooperation. The obstacles are clearly not technical in character. The future of space cooperation with the Soviet Union depends on the readiness of that nation to accept any of the broad range of projects suggested to it or to offer proposals suitable to it. The United States has set no arbitrary limits of any kind.

Mr. WEBB. I would like to say that the U.S.S.R. is superb in its coordinated use of a spectacular with propaganda and with the creation of an image that all nations better get in line with them because they expect to control the future of the world. They are masters of this. Part of my problem with our planetary program is that we will find this propaganda very difficult to overcome in the future. We ultimately will need to develop a means not to have this impression given by them.

Mr. EVINS. Mr. Administrator, you are testifying that they are strong on propaganda and dramatics.

Mr. WEBB. I would say they were very strong in developing the kind of intercontinental ballistics missiles in the 1950's which we did not have and they shook us to our boots.

They have been superior in producing the 10,000-pound payload when the most we could carry was 3,000 pounds. They have continued to be strong in those things that were important to them.

I think that does not include returning valuable information with an economic payoff to the United States. I think they will do anything they can to prevent our gaining our advantages and to gain one for themselves.

Mr. EVINS. Dr. von Braun, tell us about the civilian and the military advantages.

REASON FOR LUNAR LANDING

Dr. VON BRAUN. I think the essential objective in landing a man on the moon is not the fact that a man will set his foot on the moon and be able to recover some samples from the moon, but it lies in the

fact that the challenge is so great, the technological and scientific challenge to do these things, that through the Apollo program NASA has become the cutting edge of our technological and scientific programs for the country as a whole. For that reason it is also not too important in my view whether the immediate significance of things like the Saturn V rocket or the Apollo spacecraft is in the military area or the application to the scientific field, it creates an ability to do these kinds of things and you can very readily, as the Apollo Applications Program shows, convert a scientific objective like a lunar landing into an applications capability like a manned space station designed to explore earth resources, or you can also convert it into a military application if the military establishes an official requirement for such a station.

TECHNOLOGY DEVELOPED FOR DEFENSE

Now, this requirement aspect, I think, is a very important thing. For the last 6 or 8 years under the general budgetary pressures, the Defense Department has more and more leaned in the direction of developing something new only after a hard military requirement for that particular piece of hardware has been established. While this may have strengthened certain arms, in my opinion, it has also weakened the technology of backing up the subsequent steps.

For instance, there was a very effective program established by the Armed Forces—at that time jointly with NASA—to develop supersonic aircraft. The series of X–1, X–2 and the X–15, were all technology oriented. It laid the groundwork for all the supersonic aircraft that are flying today.

During the last 6 or 8 years, the emphasis has been more and more on establishing a hard military requirement for a particular piece of hardware or nothing will be done at all. Now, the Department of Defense has taken that position and, as a result, it has really handed the baton to do something for technology over to NASA. To put it definitely, had it not been for NASA, the cutting edge of our technological process would be very greatly dulled.

NASA TECHNOLOGY USABLE

NASA technology now lays the groundwork for even the military hardware in the next go-round.

If I can add one more thing, I think this ties in with some of the questions you raised, Mr. Talcott: You can do a great deal with the money and technology already in existence; things like river pollution or urban renewal do not require technology—new technology. Whatever money will be spent in these fields will use existing technologies. The same goes for building new tanks, new trucks and this kind of thing, but when you really get into a new area of endeavor like establishing a manned capability in space, you have to break the ice somehow and you are often confronted here with a chicken and egg problem, so to speak.

For example, the military isn't quite sure how good a manned space station really is because there is no practical experience yet on ex-

tended time in orbit by a man. No one can say how efficient a man really is. What can a man do that automatic equipment can't do? Somehow you have to learn this. If you say, "I can't establish a requirement before I am sure this thing will do it," you will never get there. So somewhere you have to put some risk money in it and say, "Let's try it."

REQUIREMENTS FOLLOW DEMONSTRATION

After you have demonstrated it, then people will come and establish requirements. For that reason I think it is quite likely that once we have established that, with the Saturn V, for instance, you can build a fine space station in orbit where a dozen or a half dozen people can really do something and do it effectively, then the Department of Defense will come around and say, "Now that we know it will work, let's establish a plan."

In this way I think we are really making a great contribution.

Mr. EVINS. You are saying while it may be important politically and psychologically to put a man on the moon, one of the greater benefits is to be capable of doing it.

EXTRACTING OXYGEN FROM AIR AND WATER

Mr. WEBB. As an example of how an advanced research and development agency like NASA works with some of the older fields, like aviation, but with new technology, developed from space know-how, we are developing in cooperation with the Air Force a breadboard mockup of a system to extract oxygen from the water for high performance, very high performance, high flying airplanes to avoid the danger from the storage for the full duration of a flight of all the oxygen required.

Dr. ADAMS. If this new system proves practical, it will help overcome the problem of manufacture and storage of oxygen in the field and on board ships.

APOLLO GUIDANCE SYSTEM

Mr. WEBB. In the field of intertial guidance, the Apollo guidance systems development involved about $60 million in the instrumentation laboratory at MIT and resulted then in contracts for over $200 million to industry to build the system, and the development of a competence that now is going forward with a research base that may well permit inertial guidance systems to make far more efficient use of the airspace over the North Atlantic than we now make with navigation systems based on communications with the ground.

Mr. EVINS. After these research projects are completed and the technology is developed, then the military is anxious to accept them.

Mr. WEBB. And we are working closely together to develop better means to make our expenditures serve their needs. There is a very active driving effort in this direction.

ADMINISTRATIVE OPERATIONS

Mr. EVINS. Let us turn to volume IV, which is the administrative operations. This appropriation funds the operational activities that provide the capability to perform the programs of NASA. It is re-

sponsible for the direction, management, and execution of the objectives assigned to NASA by the National Aeronautics and Space Act of 1958. These are set out to be about four items:

Provide the personnel staff necessary to plan, manage, and support scientific missions. The staff is comprised of approximately 43 percent professional scientists and engineers; 27 percent technicians and technically oriented wage board employees; 14 percent professional administrators, and 16 percent clerical employees.

Provide operational capability to the laboratories and facilities for in-house research and planning, directing, and executing out-of-house effort.

Support the research and development programs through the development of general purpose computer capability.

Provide the necessary logistics support to the programs, including travel and transportation, upkeep of facilities, and administrative support.

FUNCTIONAL CATEGORIES

Then you said the Administrative Operations appropriation request is subdivided into six functional categories. These functional categories are: personnel-related costs, travel costs, ADP, facilities services, techncial services, and administrative support.

FIELD INSTALLATIONS

Installations are institutionally administered by the Associate Administrator having primary responsibility for the research conducted at the installation.

The Associate Administrator for manned space flight is responsible for the Kennedy Space Center, Manned Spacecraft Center, and Marshall Space Flight Center.

The Associate Administrator for space science and applications is responsible for the Goddard Space Flight Center and Wallops Station; and the Associate Administrator for advanced research and technology is responsible for the Ames Research Center, Electronics Research Center, Flight Research Center, Langley Research Center, Lewis Research Center, and the Space Nuclear Propulsion Office.

And of course, the Associate Administrator for organization and management is the institutional director for NASA Headquarters.

You have the headquarters and three associate administrators.

STATEMENT ON ADMINISTRATIVE OPERATIONS INCREASE

Mr. JONAS. I think you ought to put in the record a statement either by the Administrator or Mr. Lilly, some explanation as to why your total budget is down about 5 percent, $218 million below last year, and your administrative costs go up, in addition to a $12 million pay raise. It is up all the way along the line and that doesn't look logical to me or anybody reading the record. With a substantial cut in program, you ought to have an equal, if not larger, cut in administrative costs.

Mr. WEBB. We would like to put that in the record. I think it will be stated by Mr. Lilly or Mr. Finger.

(The statement follows:)

The reduction in overall NASA expenditures over the last several years has been the result of time phasing in the major development programs and the delay in initiation of new efforts and application of developed technology in view of the Nation's more urgent needs in other areas. The reduction in the Apollo program reflects our progress beyond the costly research and design phases of the large launch vehicles and spacecraft systems and the construction and development of the major test, checkout, and launch facilities. We have now moved into the manufacturing and flight operations phase.

When the Nation's capacity for leadership in advanced aeronautical and space technology was challenged 10 years ago, we decided to create a national capability to operate in space. A principal goal has been the development of launch vehicles and spacecraft large enough for manned operation out to distances as far as the moon. In carrying out this objective, we joined the strengths of our universities, industry, and other Government agencies to accomplish this goal and the goals of expanding our knowledge of space and attaining a leading position in aeronautics and space technology.

This university-industry-Government team was called upon to furnish the large manpower required for design and development of spacecraft, launch vehicles and experiments, and the management capabilities of the Army Corps of Engineers were drawn upon for the construction of required facilities. The NASA buildup in that period was to provide the competent civil service staff to plan, direct, and manage the total effort. As a result, the over 400,000 persons employed in industry, universities, and Government agencies at the peak of the program were being directed by total staff of less than 10 percent that large. If NASA had maintained the same ratio of civil service to contractor employment which was existent when the buildup began, the NASA civil service strength would have peaked at 100,000 and would be about 50,000 at the end of 1969. The low ratio of civil service manpower was possible because of the heavy reliance on the industry-university team and the nature of the tasks assigned to them.

Now, as the Apollo program moves from the design and development phase into the test and operational phase, the relationship between NASA and its contractors and the composition of NASA's work force changes. The early effort was primarily in the contractors and subcontractors plants with the emphasis required for design, development, and manufacturing. As launch vehicles and spacecraft are delivered for testing, integration, checkout, and launch, the center of activity shifts from industry to the NASA in-house facilities. To accomplish these tasks NASA's in-house capabilities, in terms of both facilities and manpower, have been carefully developed through the Mercury program, the Gemini program, and the unmanned flight testing of the Saturn boosters and Apollo spacecraft. The level of activity in terms of spacecraft hours in space and manhours in space required to accomplish the flight test program and the lunar landing and return in the Apollo program is several times that required during either the Mercury or Gemini programs. It is this level of support to which NASA's in-house resources must now be applied—resources provided under the Administrative Operations appropriation.

In addition to the flight program, there is the advanced research and technology programs carried on by NASA. In contrast to the funding level of the flight programs, the funding applied to supporting research and technology effort has increased in the last few years. Because of the nature of this effort, a proportionately higher level of civil service manpower has been applied and has approximated 12,000–13,000 people over the last few years. A major portion of the program is carried on in-house in NASA facilities. The people who make the facilities useful, the individual research teams, are mostly NASA civil service personnel. In order to do effective research, the organization cannot be modeled on the same pattern as that for the design and development phase of our flight programs.

NASA has not attempted to develop in-house capability along the lines of a job shop operation. We have developed in-house the critical capability to plan, integrate, and manage the total research and development efforts, the test, checkout, and launch of space boosters and spacecraft, and provide the support necessary to operate, maintain, and use effectively the physical plant capability. The AO appropriation pays for all the costs of the salaries and benefits of the NASA personnel who must accomplish these tasks. This requirement accounts for 68 percent of the total appropriation. In addition, these programs and facilities

are supported through the development of general purpose computer capability and the provision of necessary logistics support including transportation, maintenance, and operation of facilities, and administrative and technical support.

As indicated above, the entire cost of NASA civil service personnel is carried on in the Administrative Operations appropriation. Over two-thirds of the civil service staff are working on direct program activities. These are the scientists, engineers, technicians, and administrative personnel which represent the balanced force of capable people who carry out the difficult and complex tasks involved in the research and development program. These are the ones who, in the last analysis, are accountable for and whose work will determine whether or not the maximum return is received on this major national investment. The NASA work force distribution by occupational skill group consists of 43 percent scientists and engineers and 27 percent technicians and technically oriented wage board employees, or 70 percent directly involved in the research and development program. Of the remainder, about 14 percent are professional management and administrative personnel and 16 percent clerical employees.

We have attempted to describe the changing pattern of work in both industry and NASA and the relationship of our in-house staff which requires the greatest expenditures under the Administrative Operations appropriation funding to the NASA direct program. Even though there has not been and cannot be a one-for-one reduction in Administrative Operations because of the decline in total agency funding, there has been a significant, if less obvious, reduction in AO. Since the largest part of the administrative operations appropriation goes for the pay of our civil service people, this appropriation is significantly impacted by the average cost of these people.

Since 1966, there has been a significant decrease in the planned NASA civil service strength. NASA has reduced its planned strength by over 2,700 in the 1967–68 time frame. The first reduction of 400 was taken during the 1967 budget cycle, when NASA was assessed 1¼ percent because of accelerated early retirements anticipated due to new legislation. (It should be noted that the increase in retirements experienced was less than one-half percent of the complement.) The second reduction occurred in September 1965, when NASA's end-year employment plan was reduced by 613 by the President's Government-wide economy measures. The latest reduction of 1,704 came in the fall of 1967 as a result of congressional action on the fiscal year 1968 budget. Thus, it can be seen that NASA has made significant reductions in its actual and planned in-house strength.

In addition to the change in numbers of personnel, the average cost per person has steadily increased because of the several changes in the pay scales approved by Congress. If we were using the same rates that were in existence in 1966, the 1969 administrative operations budget would be approximately $60 million lower than the current request, or a level of $586 million. In addition, economies have been and are being effected in areas other than personnel. We have been able to reduce the level for costs other than personnel from $231.5 million in 1966 to $209.5 million by 1969, a net reduction of $22 million.

The 1969 request is a minimum level which continues actions taken in 1968 at the direction of the Congress and the President to reduce our rate of expenditures. NASA's request for 1968 was $671.3 million. The Congress authorized $648.2 million and appropriated $628 million—a reduction of $43.3 million from the request. In keeping with the intent of Congress and the guidance of the President, reductions to employment and other costs were made as required to reduce operations to a level which could be supported at $628 million in both 1968 and 1969. Only those adjustments beyond the control of the agency are included in the request for appropriations in fiscal year 1969. Accordingly, the budget is structured at $628 million, adjusted only for the cost of the first increment of the 1967 Federal Employees Pay Act salary increase, and for the cost of converting certain support contracts to civil service operations because of the opinion of the General Counsel of the Civil Service Commission that operations under these contracts are proscribed by personnel statutes. The increase in the AO appropriation for this changeover to civil service performance is not an increase to the overall NASA funding level, but is a direct transfer of funding from R. & D. to administrative operations. Absorbed in the 1969 budget requests within the $628 million base is the 1969 growth at ERC, the completion of the growth at KSC related to the operational phases of manned Apollo flight, and the cost of longevity and career development pay increases for the civil service staff.

PERMANENT EMPLOYEES

Mr. EVINS. The 1969 budget is predicated upon an end-year permanent complement of 32,727, which is an increase of 305 over the planned strength at the end of 1968.

Of this increase 150 will be at the Electronics Research Center, and 155 at the Goddard Center. How many installations are there, Mr. Administrator?

Mr. WEBB. Seventeen in all.

Mr. EVINS. You have 17 facilities and you are only going to increase personnel at two points: Electronics and Goddard Center.

Mr. WEBB. We will be increasing at Cape Kennedy also but it will be offset by reductions elsewhere.

JUSTIFICATION MATERIAL

Mr. EVINS. The increase at the Goddard Center will provide for certain operations to be conducted by civil service personnel instead of by research and development contracts. We will place these introductory statements in the record.

(The pages follow:)

GENERAL STATEMENT

The Administrative Operations appropriation includes funding for the personnel and operational activities that provide the capability to perform the programs of NASA. It is the appropriation responsible for the direction, management, and execution of the objectives assigned to NASA by the aNtional Aeronautics and Space Act of 1958. The objectives of this appropriation are to:

Provide the personnel staff necessary to plan, manage, and support scientific missions. The staff is comprised of approximately 43 percent professional scientists and engineers, 27 percent technicians and technically oriented wage board employees, 14 percent professional administrators, and 16 percent clerical employees.

Provide operational capability to the laboratories and facilities for inhouse research and planning, directing, and executing out-of-house effort.

Support the research and development programs through the development of general purpose computer capability.

Provide the necessary logistics support to the programs, including travel and transportation, upkeep of facilities, and administrative support.

The Administrative Operations appropriation request is subdivided into six functional categories. These functional categories are:

1. Personnel related costs which is comprised of compensation and benefits for civil service personnel and for personnel of other Government agencies detailed to NASA, and includes supporting personnel costs; i.e., the cost of personnel movements, as provided by law, the cost of recruiting and personnel investigation services provided by the Civil Service Commission, and the cost of personnel training.

2. Travel includes the cost of program related travel, travel to meetings and technical seminars, and administrative travel.

3. Automatic data processing includes the cost of lease, purchase, and maintenance of equipment, and the cost of providing contract services for programing and operations for general purpose computer capability.

4. Facilities services includes the cost of the acquisition of facilities through lease and minor construction, maintenance and related services, custodial services, facility operations, and range operations at the John F. Kennedy Space Center, NASA.

5. Technical services includes the cost of certain engineering services, and scientific and technical information and education programs.

6. Administrative support includes the cost of communications, administrative printing, administrative supplies, materials, equipment, transportation support, and other support services.

Installations are institutionally administered by the associate administrator having primary responsibility for the research and development programs conducted at the installation. The associate administrator for manned space flight is responsible for the Kennedy Space Center, Manned Spacecraft Center, and Marshall Space Flight Center; the associate administrator for space science and applications is responsible for the Goddard Space Flight Center and Wallops Station; and the associate administrator for advanced research and technology is responsible for the Ames Research Center, Electronics Research Center, Flight Research Center, Langley Research Center, Lewis Research Center, and the Space Nuclear Propulsion Office. The associate administrator for organization and management is the institutional director for NASA headquarters.

The organization and operation of a NASA installation are largely products of its prime missions and research responsibilities. For example, the installations under the cognizance of the associate administrator for manned space flight are engaged primarily in the development, procurement, and launching of large launch vehicles and manned spacecraft systems, and their auxiliary equipment. In addition, they are responsible for the mission planning and operations during the mission. These activities require a large contractor effort which must be directed, monitored, and coordinated by senior professional NASA personnel located at contractor plants, launch and tracking sites, and at NASA installations. The support required for the manned program activity is large in comparison to other installations because of the scope of the technical objectives and the diversity of effort.

Installations under the cognizance of the associate administrator for advanced research and technology are primarily engaged in research, both inhouse and contract, and monitoring of relatively small research contracts with universities and nonprofit institutions. These installations utilize installation laboratories in the intensive pursuit of areas of basic research which require support of a different type than the large project undertakings, although these installations do have important flight project responsibilities. The size of the administrative operations budget at each installation is, therefore, influenced by the objectives and characteristics of the research and development mission.

OPERATING PLAN, 1968

The determinations of the program level for Administrative Operations in 1969 were affected to a considerable extent by congressional action on the 1968 budget. The budget estimate for 1968 was $671.3 million. Subsequent to the submission of the budget, the Civil Service Commission increased the salary scales for junior and middle grade scientists and engineers, causing an unbudgeted increase of $3 million. The congressional authorization for administrative operations was $648.2 million. Plans were developed by NASA to operate at this level by decreasing planned employment by 250 positions, reducing overtime, travel, planned ADP equipment rentals and procurement, the procurement of supplies, materials and equipment, planned service contracts, and minor construction. The final appropriation of $628 million required far more extensive reductions, with the largest part of the reductions necessarily coming in the last half of the year. The 1968 operating plan was established at $628 million and has been adjusted only by the increase of $12.5 million necessary to provide for the cost of the 1967 Federal Employees Pay Act enacted in December 1967, and by an appropriation transfer of $127,000 to reimburse the General Services Administration for rental space. The $12,373,000 net increase in the operating plan above the amount appropriated is financed by a transfer from the research and development appropriation.

To achieve the reductions necessitated by the amount appropriated, significant decreases were required throughout administrative operations. They include: reduction of the employment ceiling of 34,126 on July 1, 1967, to 32,422 on June 30, 1968; reduction of budgeted paid overtime by 35 percent; reduction of budgeted travel by 15 percent; and reduction of all other budgeted costs by 17 percent.

BUDGET ESTIMATE, 1969

In developing the 1969 appropriation request, it was contemplated that the reduced level of operations required in 1968 would be continued in 1969 despite increases in personnel compensation resulting from career development, the

extra day of pay in 1969, annualization of wage-board increases, and the cost of 150 additional personnel at the Electronics Research Center. Accordingly, for 1969, $648.2 million is requested and includes requirements above the 1968 base only for the full-year cost of the 1967 Federal Employees Pay Act, $18.6 million, and the cost of providing certain support services at the Goddard Space Flight Center with civil service personnel in lieu of research and development contracts. This latter item requires an increase of $1.6 million to the Administrative Operations appropriation.

The cost of the second increment of the 1967 Federal Employees Pay Act, which will be effective on July 1, 1968, is not included in the 1969 NASA budget. The estimated Government-wide cost of this increment of the pay legislation is included in the President's budget as a one-line item.

MANPOWER PROGRAM, 1968

The current 1968 manpower plan of 32,422 permanent personnel is 1,704 less than the 1968 budget. The lower number of personnel results from the actions taken by NASA to operate at the reduced appropriation levels. The largest decrease, 700, is at the Marshall Space Flight Center, and significant decreases occur at all other field installations except for the Kennedy Space Center and the Electronics Research Center. The increase at the Kennedy Space Center is required to provide the necessary support for Apollo launch operations. The increase of 116 at the Electronics Research Center provides an increment of the planned phased staffing at this new Center.

MANPOWER PROGRAM, 1969

The 1969 budget is predicated upon an end-year permanent complement of 32,727, which is an increase of 305 over the planned strength at the end of 1968. The increase will occur at the Electronics Research Center, 150, and at the Goddard Space Flight Center, 155. The increase of 150 for the Electronics Research Center is the 1969 increment of their phased buildup and will bring their strength to 966 at the end of the year. The increase at the Goddard Space Flight Center will provide for certain Center operations to be conducted by civil service personnel instead of by research and development contracts as in prior years. The ceiling for all other installations will be held to the employment level planned for the end of 1968.

DISTRIBUTION BY FUNCTIONAL CATEGORY

The following summary table indicates the distribution of the total appropriation requirements:

	1967	1968	1969
Personnel related costs	$413,957,000	$436,075,000	$442,502,000
Travel	17,953,000	16,491,000	16,530,000
Automatic data processing	36,919,000	31,506,000	31,487,000
Facilities services	106,209,000	92,635,000	94,928,000
Technical services	23,689,000	18,790,000	18,785,000
Administrative support	47,858,000	44,876,000	43,968,000
Total	646,585,000	640,373,000	648,200,000

SUMMARY TABLE

Mr. EVINS. Here is a summary table of the administrative operations on the first page. There is an increase at the Kennedy Center from $93,831,000 to $97,710,000.

There is an increase in the Manned Spacecraft Center from $95,908,000 to $97,096,000 as this table will show.

Place it in the record.

(The page follows:)

ADMINISTRATIVE OPERATIONS

SUMMARY OF OBLIGATIONS BY INSTALLATION

	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Manned space flight	$317,102,000	$312,957,000	$312,984,000
John F. Kennedy Space Center, NASA	92,742,000	93,831,000	97,710,000
Manned Spacecraft Center	95,659,000	95,908,000	97,096,000
Marshall Space Flight Center	128,701,000	123,218,000	118,178,000
Space science and applications	80,798,000	77,392,000	79,502,000
Goddard Space Flight Center	71,069,000	68,525,000	70,594,000
Wallops Station	9,729,000	8,867,000	8,908,000
Advanced research and technology	188,128,000	188,882,000	195,108,000
Ames Research Center	33,824,000	33,563,000	33,975,000
Electronics Research Center	12,219,000	15,467,000	19,079,000
Flight Research Center	9,488,000	9,439,000	9,728,000
Langley Research Center	64,337,000	62,095,000	62,765,000
Lewis Research Center	66,280,000	66,220,000	67,352,000
Space Nuclear Propulsion Office	1,980,000	2,098,000	2,209,000
Supporting operations: NASA Headquarters	60,557,000	61,142,000	60,606,000
Total	646,585,000	640,373,000	648,200,000

PERSONNEL ADJUSTMENTS

Mr. EVINS. There is a decrease in the Marshall Space Center from $123,218,000 to $118,178,000.

The Goddard Center goes up from $68,525,000 to $70,594,000. The Wallops Station, this increases from $8,867,000 to $8,908,000.

NASA Headquarters shows a slight decrease, $61,142,000 to $60,606,000. You have a little tighter belt over there, Mr. Administrator, on personnel. The total is $648,200,000.

Referring to the second page, you show the number of personnel positions. Manned Space Flight is the same, 13,896 for 1968 and 1969.

For the three centers, Kennedy, Marshall and the Manned Spacecraft Center, you show the same personnel. Then Goddard has increased, and the Electronics Center. The only two areas in which there is an increase in this budget is the Goddard Space Flight Center, and the Electronics Research Center.

The NASA Headquarters is shown to have 2,279 last year and 2,279, or the same, for next year.

The total permanent positions go up by 305 because of the two centers indicated.

Then you have positions other than permanent. That is the same as last year's. These are temporary employees and not contract employees?

Mr. LILLY. That is correct.

Mr. EVINS. This budget doesn't reflect your number of contract employees?

Mr. LILLY. That is correct.

TOTAL POSITIONS

Mr. EVINS Place this in the record.
(The page follows:)

NUMBER OF PERSONNEL POSITIONS

	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Manned space flight	14,510	13,896	13,896
John F. Kennedy Space Center, NASA	2,720	2,931	2,931
Manned Spacecraft Center	4,704	4,579	4,579
Marshall Space Flight Center	7,086	6,386	6,386
Space science and applications	4,300	4,183	4,338
Goddard Space Flight Center	3,782	3,686	3,841
Wallops Station	518	497	497
Advanced research and technology	12,417	12,064	12,214
Ames Research Center	2,173	2,092	2,092
Electronics Research Center	700	816	966
Flight Research Center	590	566	566
Langley Research Center	4,161	3,990	3,990
Lewis Research Center	4,676	4,485	4,485
Space Nuclear Propulsion Office	117	115	115
Supporting operations: NASA Headquarters	2,499	2,279	2,279
Total permanent positions	33,726	32,422	32,727
Positions other than permanent	2,182	2,182	2,182
Total positions	35,908	34,604	34,909

PERSONNEL COSTS

Mr. EVINS. The plan for nonpermanent employees is 2,182 in 1969. The total complement, therefore, is 34,604 in 1968 and 34,909 in 1969. This is an increase of 305.

Place pages AO 1–1 through AO 1–5 in the record.
(The pages follow:)

Personnel

1967	$413,957,000
1968	436,075,000
1969	442,502,000
Change in 1969	+6,427,000

DESCRIPTION

The estimate for personnel and related costs includes the regular pay, overtime, holiday, Sunday and nightwork differential pay, of NASA personnel is permanent, temporary, part-time and intermittent positions, and the cost of military personnel and personnel of other agencies detailed to NASA. It also includes the Government's contribution to the Civil Service Retirement Fund for permanent employees, the contribution to social security for other than permanent employees, the Government's share of the costs of employees' life insurance and health benefits, incentive awards and the cost of severance pay. The estimate provides for the cost of travel to initial duty station, travel incident to permanent changes in station and the cost of shipment of household goods and personal effects for transferred employees. Reimbursement to the Civil Service Commission for security investigations and examining services, and payments to other agencies and non-Government institutions for personnel training are also included in this activity.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$33,108,000	$37,683,000	$39,979,000
Manned Spacecraft Center	59,664,000	63,672,000	64,747,000
Marshall Space Flight Center	90,259,000	91,184,000	87,954,000
Goddard Space Flight Center	47,089,000	49,988,000	52,508,000
Wallops Station	5,153,000	5,301,000	5,346,000
Ames Research Center	25,923,000	26,943,000	27,372,000
Electronics Research Center	7,407,000	10,126,000	12,428,000
Flight Research Center	7,098,000	7,205,000	7,368,000
Langley Research Center	46,865,000	48,726,000	49,246,000
Lewis Research Center	53,823,000	55,029,000	56,327,000
Space Nuclear Propulsion Office	1,691,000	1,893,000	1,943,000
NASA Headquarters	35,877,000	38,325,000	37,284,000
Total	413,957,000	436,075,000	442,502,000

BASIS OF FUND REQUIREMENTS

The planned end-of-year employment for NASA civil service personnel includes 32,422 permanent employees in 1968 and 32,727 permanent employees in 1969. The plan for nonpermanent employees is 2,182 in 1968 and 1969. The total complement, therefore, is 34,604 positions in 1968 and 34,909 positions in 1969. The distribution of the permanent positions by installation is as follows:

DISTRIBUTION OF POSITIONS BY INSTALLATION

	1967	1968	1969
Permanent positions:			
Kennedy Space Center	2,720	2,931	2,931
Manned Spacecraft Center	4,704	4,579	4,579
Marshall Space Flight Center	7,086	6,386	6,386
Goddard Space Flight Center	3,782	3,686	3,841
Wallops Station	518	497	497
Ames Research Center	2,173	2,092	2,092
Electronics Research Center	700	816	956
Flight Research Center	590	566	566
Langley Research Center	4,161	3,990	3,990
Lewis Research Center	4,676	4,485	4,485
Space Nuclear Propulsion Office	117	115	115
Headquarters	2,499	2,279	2,279
Subtotal	33,726	32,422	32,727
Nonpermanent positions	2,182	2,182	2,182
Total	35,908	34,604	34,909

The number of permanent positions for 1968 is 1,704 fewer than included last year for 1968. The reduction is a result of the effect of the congressional action on NASA's 1968 budget request. The authorization for "Administrative Operations" was $648.2 million or a $23.1 million reduction from the original $671.3 million budget request. The plans which were developed to operate at this level reduced the employment level of 34,126 contemplated in the 1968 budget by 250 positions to a revised level of 33,876. This was accomplished by limiting the planned growth at the Electronics Research Center to 150 and keeping the Langley Research Center at the end-1967 level rather than increasing them as planned in the 1968 budget.

The appropriation, as enacted by Congress, was $20.2 million less than the authorization, which required further reductions in the planned end-year employment levels. In general, each installation was assigned a 4-percent reduction in their planned end-year employment in order to operate within the reduced fund availability. The general reduction was adjusted to reflect changes in the research and development program which resulted from congressional action and to reflect other programmatic requirements. The adjustments at the Kennedy Space Center (KSC), the Manned Spacecraft Center (MSF), the Marshall Space Flight (MSFC), the Goddard Space Flight Center (GSFC) and headquarters were modified to reflect changes in programmatic emphasis. The research and develop-

ment programs reduced or eliminated, impacted the workload at some Centers more than others. Because the R. & D. program reduction impact at MSFC was substantially greater than at other installations, the reduction in personnel was commensurately greater. Because of the magnitude of the required reduction in staff at MSFC, and the timing of final appropriation action, use of reduction-in-force procedures are necessary to effect the bulk of the cut.

The reduction at the Goddard Space Flight Center is 96, which is less than the general pro rata reduction. The GSFC ceiling was adjusted to provide the manpower needed to support adequately the Manned Space Flight tracking effort for which they are responsible. In a similar manner the reduction at the Manned Spacecraft Center (MSC) was adjusted to accommodate requirements of the Apollo program. As the Apollo program moves toward extensive flight activities, the workload placed on KSC increases. The Kennedy Space Center personnel strength was augmented by 211 positions to accommodate this growth in their workload.

The other case of departure from a proportional reduction is at the headquarters field offices. A review of the offices in the Los Angeles, Calif., area was conducted and as a result, the functions of the NASA Pasadena office and the Western Support Office will be consolidated and the Western Support Office abolished.

In addition to the changes noted above, there were changes to installation allocations because of modifications in agency structure and mission emphasis. The most notable of these occurred when the NASA resident office at Downey, Calif., was transferred from the cognizance of headquarters and divided between the Manned Spacecraft Center and the Marshall Space Flight Center. This change amounted to a 70 increase to MSC and a 56 increase to MSFC. The other changes were minor.

The following table summarizes the changes for 1968 permanent position allocations to institutional directors from the 1968 budget to the current plan.

CHANGES IN THE 1968 PERMANENT POSITION PLAN

Institutional director	Plan in 1968 budget	Internal NASA re-alinements	Effect of appropriation reduction in 1968	1968 plan in 1969 budget
Manned space flight	14,384	+126	−614	13,896
Space science and applications	4,300	.....	−117	4,183
Advanced research and technology	12,831	−14	−753	12,064
Supporting operations	2,611	−112	−220	2,279
Total	34,126	0	−1,704	32,422

PERMANENT POSITIONS

In 1969 NASA is requesting an increase of 305 permanent positions above the planned 1968 end-of-year employment level. An increase of 150 positions is proposed for the Electronics Research Center as the 1969 increment of their phased buildup and will bring their strength to 966 at the end of the year. The remaining 155 positions are for the Goddard Space Flight Center to provide for the performance of certain functions by civil service personnel rather than by contract. The employment level for all other installations will be held to the end 1968 level.

NONPERMANENT POSITIONS

The 1968 and 1969 plan for nonpermanent positions is 2,182, the same level as for 1967. These positions are used for varied programs, of which the largest is the NASA summer employment program. NASA hires college students and high school and college faculty members during the summer to augment its work force at the peak vacation period and to provide these people exposure to the NASA technical effort. The benefits to the participants are numerous, and the education and training they receive is a considerable national asset. A portion of the nonpermanent positions is used to provide for NASA's participation in the President's Youth Opportunity Campaign. This program presents underprivileged youths the opportunity to work at summer jobs at the various NASA installations, when unskilled personnel can be effectively used.

In addition, some of these positions are used during the remainder of the year to provide for the agency's participation in the back-to-school part of the Youth Opportunity Campaign. This program continues during the schoolyear, and the underprivileged youths are employed at a variety of unskilled tasks during a limited workweek of not more than 15 hours.

As in the past, the agency continues to provide significant training opportunities for technically oriented college students participating in the cooperative training program throughout the year. The student employed under a cooperative training agreement works for a term at a NASA installation and then spends a term in regular study at his college or university. This work-study program combines practical experience with theory and has been an outstanding recruitment source for NASA.

Experts and consultants are also included under nonpermanent positions. They are usually employed for a few days at a time when their expertise is required.

REDUCTIONS AT MARSHALL CENTER

Mr. EVINS. The greatest attrition is in the Marshall Center. Why is this, Mr. Administrator?

Mr. WEBB. This is because the buildup for the Saturns has gone over the peak and we have not inserted additional work there. The Apollo Applications work that we had expected to put at Marshall did not materialize in last year's budget. They will have a very important role in the Apollo Applications program once it is approved. In previous years, Mr. Chairman, we tended to level out our employment by making assumptions that the major programs would go forward, but this year we are not committing these funds until the Congress has acted on them.

WESTERN SUPPORT OFFICE

Mr. EVINS. You had a western office at Pasadena, and are you consolidating this?

Mr. WEBB. Yes, sir.

Mr. EVINS. The functions of the NASA Pasadena office and Western Support Office will be consolidated and the Western Support Office abolished. These two are to be merged?

Mr. WEBB. That is correct.

Mr. EVINS. You are transferring other personnel from Downey, Calif. What is proposed here?

Mr. LILLY. They were contract management personnel. We are moving those people back to the parent Center, to the Manned Spacecraft Center, and the Marshall Center.

GRANTS TO THE COLLEGES

Mr. EVINS. One of the reasons you want these grants to the colleges is to get people space-minded and later some are recruited into the service of the agency.

Mr. WEBB. That is right; but we also refer to training programs where they come and work with us for a temporary period and then a certain number remain with us when they have gotten their degrees and are ready to go to work.

Mr. LILLY. When you read the number of 2,182 temporaries, that includes a little over 600 of what we call co-op students who work part time and go to school part time.

Mr. WEBB. It is a little like the old Antioch College idea.

Mr. EVINS. You have students and consultants who do part-time work and later they become so enamored they become permanent.

Mr. JONAS. You have no lien on them?

Mr. WEBB. No, sir. It is only through their interest developed while working with us that they then want to work on a regular basis.

Mr. JONAS. Do you have any statistics to show how many of the beneficiaries of your scholarship and grant programs have come to work for NASA?

Mr. WEBB. Yes, sir; we do have.

Mr. JONAS. What percentage would it be?

Mr. WEBB. Let me furnish that for the record. Actually we built up, you see, rapidly, and are not now putting many new ones in the program, but it takes 3 years for them to get the Ph. D., so in essence only about a thousand have graduated. My recollection is that about half of those have gone to work for some Government agency and about, maybe a third are working in industry in this field, and a good many have gone into teaching.

BREAKDOWN OF NASA'S TRAINING PROGRAM PH. D.'S

Mr. JONAS. I think it would be well for the committee to know, percentagewise or on the basis of members, how many of these people who we are educating are going to work for the Government.

Mr. FINGER. Of the approximately 1,700 cooperative students who have worked in NASA since 1960, over 300 have joined NASA full-time. More than half of the people who have graduated through our predoctoral training program under our Sustaining University Program have remained in the universities to continue to train other students, to do research, and to go on to postgraduate work.

Mr. JONAS. Fifty percent have remained in the institution.

Mr. FINGER. Yes. A very small percentage of the predoctoral trainees have come in to work in NASA. I can supply that for the record. The others have gone to industry and other government agencies. In general, we have provided a total increase in the numbers of highly trained people in science and engineering.

(The requested information follows:)

As of March 1, 1968, 1,020 trainees who received Ph. D. degrees from NASA's Training Program have gone into the following careers:

	Percent
University research and/or teaching	58
Industrial research	32
Military service	4
Government (including NASA)	6

NASA: Of the 6 percent, one quarter or 14 Ph. D. recipients have gone to work directly for NASA and two serving in the military are assigned to NASA centers.

EMPLOYEE DISTRIBUTION

Mr. EVINS. Here are interesting figures on the distribution of permanent employees. You are showing an increase in Apollo applications and a slight decrease in the Apollo program. The Apollo applications, permanent assignments go up from 2,015 to 2,707, and advanced missions go from 325 to 351.

In physics and astronomy there is an increase. There is also an increase in lunar and planetary. The sustaining university program remains the same.

The chart on page AO 1–7 shows the composition of the permanent staff by occupational group.

Twelve percent are technicians; 14 percent are in Wage Board.

Professional administration is 13.7 percent and clerical is 16. Professional scientists and engineers, 42 percent. Not quite 50 percent of the staff is professional scientific personnel.

Place pages 1–6 through 1–9 in the record.

(The pages follow:)

A large portion of the civil service effort will continue to be applied in the manned space flight area. In 1967, the Gemini program was completed and the Apollo effort was peaking. In 1968 and 1969, there is a decline in the manpower applied to Apollo with some increase in the manpower required for the Apollo applications area.

The effort applied to space science and applications programs shows a decline between 1967 and 1968 because of changes in the authorized R. & D. program activity. The level in 1969 will be slightly higher than in 1968 because of the additional civil service personnel planned for the Goddard Space Flight Center in 1969.

The manpower working on advanced research and technology programs shows a decline between 1967 and 1968. The chief reason for the change is the effect of congressional action on the 1968 budget. The largest decline is in the nuclear rockets program. In 1969 there is an increase in the effort applied to the aeronautical vehicles and electronics systems programs.

The effort applied to the tracking and data acquisition program is relatively unchanged over the 3 fiscal years. The increased effort required to prepare for the tracking of the manned Apollo missions has offset the declines in requirements for other programs.

The decline in the number of support positions between 1967 and 1968 relates to the position reductions made by the agency in order to operate within the reduced appropriation. The increase in these positions in 1969 is related to the 305 new positions being requested.

The distribution of permanent positions by installation identifies where the effort is being applied and the distribution of permanent positions by program relates to the staff to principal areas of work. Another aspect of agency employment is the composition of the work force by major skill as follows:

COMPOSITION OF PERMANENT STAFF BY OCCUPATIONAL GROUP

Occupational group	1967		1968		1969	
	Number	Percent	Number	Percent	Number	Percent
Professional scientists and engineers	14,015	41.5	13,919	42.9	14,037	42.9
Technicians	4,175	12.4	4,115	12.7	4,221	12.9
Wage board	5,162	15.3	4,557	14.1	4,577	14.0
Professional administrative	4,601	13.6	4,464	13.8	4,487	13.7
Clerical	5,773	17.2	5,367	16.5	5,405	16.5
Total	33,726	100.0	32,422	100.0	32,727	100.0

MANPOWER UTILIZATION—DISTRIBUTION OF PERMANENT POSITIONS BY PROGRAM

	1967	1968	1969
Direct positions:			
Manned space flight	10,536	10,277	10,260
Gemini	30		
Apollo	9,300	7,937	7,202
Apollo applications	888	2,015	2,707
Advanced missions	318	325	351
Space science and applications	3,219	2,989	3,080
Physics and astronomy	1,401	1,362	1,393
Lunar and planetary	405	284	286
Launch vehicle development	182		
Launch vehicle procurement	445	476	469
Bioscience	271	276	279
Space applications	515	591	653
University affairs: Sustaining university program	57	54	54
Advanced research and technology	8,104	7,871	8,030
Basic research	1,284	1,243	1,307
Space vehicle systems	1,462	1,362	1,329
Electronics systems	1,133	1,123	1,189
Human factor systems	383	374	379
Space power and electric propulsion systems	948	925	950
Nuclear rockets	409	198	188
Chemical propulsion	367	376	392
Aeronautical vehicles	2,118	2,270	2,296
Tracking and data acquisition	976	958	952
Technology utilization	51	47	47
Subtotal, direct	22,943	22,196	22,423
Support positions:			
Director and staff	920	899	900
Administrative support	5,487	5,125	5,134
R. & D. support	4,376	4,202	4,270
Subtotal, support	10,783	10,226	10,304
Subtotal, permanent	33,726	32,422	32,727
Other than permanent	2,182	2,182	2,182
Total	35,908	34,604	34,909

As reflected above, professional scientists and engineers comprise over 42 percent of the NASA work force. Technicians and technically oriented wage board employees, who work in direct support of the professional technical staff, make up another 27 percent of the complement. The types of positions included in each category are described below:

Professional scientists and engineers includes professional positions engaged in aerospace research, development, operations, and related work, including the development and operation of specialized facilities and supporting equipment. In addition, positions in the medical and biological sciences are included.

Technician positions include scientific and engineering aids, shop superintendents, quality assurance specialists, production planners and inspectors, technicians in drafting, photography, and related positions.

Wage board positions include trade, craft, and general labor positions (both supervisory and nonsupervisory) which are compensated on the basis of prevailing local wage rates.

Professional administrative positions include professional management positions in the fields of general management, financial management, procurement contracting, personnel, security, library and editorial work, and related fields for which a university degree or the equivalent, and specialized training and experience are basic qualifications.

Clerical positions include secretarial, specialized and general clerical, administrative assistant, and related positions, the qualification requirements for which are clerical training and experience or specialized nonprofessional experience in the areas of supply, fiscal, logistics, statistics, or related activities.

SUMMARY OF PERSONNEL COSTS

	1967	1968	1969
A. Compensation and benefits:			
1. Compensation:			
(a) Permanent positions	$361,883,000	$383,335,000	$390,349,000
(b) Nonpermanent positions	5,959,000	5,514,000	5,723,000
(c) Reimbursable details	4,041,000	4,379,000	4,486,000
(d) Overtime and holiday pay	8,752,000	6,645,000	6,222,000
(e) Other compensation	513,000	546,000	548,000
Subtotal	381,148,000	400,419,000	407,328,000
2. Benefits	28,374,000	30,988,000	30,572,000
Subtotal	409,522,000	431,407,000	437,900,000
B. Supporting costs:			
1. Movement of personnel	1,449,000	1,967,000	1,869,000
2. Civil Service Commission services	370,000	455,000	451,000
3. Personnel training	2,616,000	2,246,000	2,282,000
Subtotal	4,435,000	4,668,000	4,602,000
Total, personnel	413,957,000	436,075,000	442,502,000

COSTS OF CONSULTANTS

Mr. JONAS. On 1–9, of the $5,723,000 for nonpermanent positions, how much of that is for consultants and how much temporary employees, or is that all one item? Do you have any temporaries other than consultants?

Mr. LILLY. Yes, we do.

Mr. JONAS. Is the cost for consultants included in the $5.7 million?

Mr. LILLY. Yes.

Mr. JONAS. What do you pay a year for consultants?

Mr. LILLY. Mr. Jonas, the annual cost for consultants is approximately $1 million.

Mr. JONAS. What is it running, about $75 a day or $100?

Mr. LILLY. The majority of consultants are paid from $85 a day to $100 a day.

Mr. JONAS. Plus travel and subsistence?

Mr. LILLY. That is correct, when they travel.

Mr. JONAS. How long do you keep a consultant on board? Is it just a day or two at a time or a week or a month?

Mr. LILLY. We engage consultants, and they are considered as being on our rolls if we use them. They are used only when we have need for them. For instance, you may have a consultant that you have made arrangements for for a year, but maybe use him only 3 days out of the year. Some are used more than others.

Mr. WEBB. The maximum is 130 days per year for anyone.

Mr. EVINS. They are subject to call at any time, since they are under contract?

Mr. WEBB. That is right.

NUMBER OF CONSULTANTS

Mr. EVINS. Supply for the record the number of consultants under contract with the Space Administration.

(The information requested is as follows:)

CONSULTANT TO THE ADMINISTRATOR

Arnold, Dr. Lee
Aven, Mr. Alexander P.
Beggs, Mr. James M.
Bisplinghoff, Dr. Raymond L.
Boone, Adm. W. Frederick, USN, Ret.
Brown, Dr. Herbert R.
Cabell, Gen. Charles P., USAF, Ret.
Cochran, Miss Jacqueline
Draper, Dr. C. Stark
Dupree, Dr. A. Hunter
Glenn, Col. John H., Jr. USMC, Ret.
Godsey, Mr. Frank W., Jr.
Hagerty, Dr. William W.
Harvey, Dr. Mose L.
Johnson, Mr. Gifford K.
Kerr, Mr. Breene M.
Kirkpatrick, Mr. Richard B.
Lancaster, Dr. Otis E.
Lee, Mr. John G.
Levy, Mr. Lawrence
Long, Dr. Franklin A.
Lynch, Mr. Gerald J.
McWilliams, Mr. William J.
Miles, Hon. Rufus E., Jr.
Osborne, Hon. Stanley deJ.
Poole, Dr. Richard W.
Raymond, Dr. Arthur E.
Rhode, Mr. Richard V.
Satterthwaite, Hon. Joseph C.
Sayles, Dr. Leonard R.
Schomburg, Gen. August, USA, Ret.
Seamans, Dr. Robert C., Jr.
Sherman, Mr. Harvey
Sims, Mr. Harold
Wells, Hon. Herman B.
Wolff, Mr. Harold A.
Zisch, Mr. William E.

CONSULTANTS TO THE ADMINISTRATOR SERVING ON THE US/USSR JOINT EDITORIAL BOARD

Calvin, Prof. Melvin, Chairman
Carlson, Prof. Loren D.
Krauss, Dr. Robert W.
Leighton, Prof. Robert B.
Marburger, Dr. John F.
Vishniac, Dr. Wolf
Total, 43.

Mr. EVINS. I believe you said Dr. Seamans is in such capacity at this time?

Mr. WEBB. That is correct, sir. He is planning to give us roughly 1 day per week.

OVERTIME PAY

Mr. EVINS. Overtime pay goes down from $8,700,000 in 1967 to $6,200,000 for 1969. You have been able to cut this down. The level of overtime was formerly 2.4 percent and now it is 1.6 percent. This is shown on page 1–13.

TRAVEL

Let us turn over to travel. We will place pages 1–15 through 1–19 in the record.

(The pages follow:)

The legislation approved in 1966 provided that the Government would pay for certain relocation costs, such as the expenses of selling and buying a home, the cost of one trip to the new duty station for the purpose of securing new housing, and the cost of family relocation allowances. These benefits are in addition to those previously paid to employees. The 1968 estimate is based upon projected full-year costs after 1 year of operation under the new law. The 1969 level is expected to be slightly lower than 1968.

2. Civil Service Commission services

1967	$370,000
1968	455,000
1969	451,000

The Civil Service Commission conducts security investigations and provides generalized recruitment services to NASA. The cost of security investigations is a function of two variables, the number of investigations to be conducted and the unit charge made by the Civil Service Commission. Compilation of center estimates of the number to be conducted and the projected unit charge for each

year is the basis for the cost estimate. In addition to these services, the Civil Service Commission modernized in 1966 its system of recruiting and staffing the civil service by the establishment of a network of Interagency Boards of Examiners to assume the examining process formerly carried out through the operations of 661 separate agency boards of examiners and the Commission's 11 examining offices. The boards will be financed by user agencies on a pro rata basis. The estimated cost to NASA for these services will remain about the same level for 1968 and 1969.

3. Personnel training

1967	$2,616,000
1968	2,246,000
1969	2,282,000

The maintenance and expansion of the skills of personnel is essential to an organization such as NASA which is charged with the responsibility for complex technical programs. Such training is provided within the framework of the Government Employees Training Act of 1958. Part of the training is provided by other Government agencies. When employees participate in training courses of other agencies, NASA is able to benefit from existing programs. The remainder of the training is provided through non-Government sources, and the cost is for tuition, fees, and related costs for training at colleges, universities, technical institutes, and related institutions, and for the cost of seminars and workshops in which groups of employees receive training in courses of agencywide interest. Such training is used to maintain and to expand employee skills. The increase in 1969 is primarily at the Electronics Research Center and is related to the increased complement at that center.

TRAVEL

1967	$17,953,000
1968	16,491,000
1969	16,530,000
Change in 1969	+39,000

DESCRIPTION

The estimates include the cost of transportation, per diem, and incidental costs required for employee travel for the purpose of direction and coordination of research and development, construction of facilities, and administrative management programs; travel for contract management and flight mission support; and travel to launching sites and tracking stations. It also includes the cost of travel to NASA-sponsored meetings and conferences, as well as meetings sponsored outside NASA, when such travel is in the interest of the agency; of travel by non-NASA employees (31 U.S.C. 22a); and of travel by unpaid members of research advisory committees. Charter, contract, or lease of passenger aircraft and the cost of local transportation by taxi, bus, or private automobile for which the employee is reimbursed are included in the estimate. Costs for travel to initial duty station and for permanent change of station are excluded from this estimate and included under personnel-related costs. The cost of motor pool operations are included under administrative support.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$867,000	$819,000	$819,000
Manned Spacecraft Center	4,433,000	4,093,000	4,093,000
Marshall Space Flight Center	3,098,000	2,945,000	2,945,000
Goddard Space Flight Center	2,630,000	2,183,000	2,183,000
Wallops Station	136,000	127,000	127,000
Ames Research Center	841,000	793,000	793,000
Electronics Research Center	310,000	440,000	485,000
Flight Research Center	197,000	211,000	211,000
Langley Research Center	1,542,000	1,188,000	1,188,000
Lewis Research Center	1,058,000	988,000	988,000
Space Nuclear Propulsion Office	193,000	195,000	195,000
NASA Headquarters	2,648,000	2,509,000	2,503,000
Total	17,953,000	16,491,000	16,530,000

BASIS OF FUND REQUIREMENTS

SUMMARY OF TRAVEL BY MAJOR CATEGORY

	1967	1968	1969	Change in 1969
Program related travel:				
Direction, coordination, and management of research and development and construction of facilities program activities	$10,354,000	$9,763,000	$9,610,000	$−153,000
Flight mission support	1,982,000	2,003,000	2,145,000	+142,000
Overseas travel to launch and tracking sites	708,000	678,000	735,000	+57,000
Subtotal	13,044,000	12,444,000	12,490,000	+46,000
Meetings and technical seminars:				
Government-sponsored meetings	1,184,000	976,000	976,000	
Other than Government-sponsored meetings and technical seminars	1,179,000	980,000	980,000	
Subtotal	2,363,000	1,956,000	1,956,000	
Administrative travel	2,546,000	2,091,000	2,084,000	−7,000
Total, travel	17,953,000	16,491,000	16,530,000	+39,000

The travel most directly related to research and development and construction of facilities activities is included under program-related travel. The amount for this purpose accounts for over 75 percent of the travel requirements in 1969. The largest individual item is for direction, coordination, and management of research and development and construction of facilities program activities. Because of the complexity of the programs and the distribution of contractor and subcontractor effort throughout the entire United States, coordination of activities requires frequent examination by personnel responsible for the program. In addition to coordination of activities, the cost of travel for the management of contracts placed with industry, universities, and others is included here.

The costs for this travel are estimated to be $153,000 lower in 1969 than in 1968. The largest part of the decrease is due to the change in orientation from the development of the launch technique at the Kennedy Space Center to actual flight mission operations, and in a similar change at the Manned Spacecraft Center from spacecraft development to flight mission operations. These decreases are partially offset by an increase at the Electronics Research Center which reflects the additional responsibilities there in 1969 for both direction and coordination of program activities, and for management of an increased number of contracts.

Flight mission support

1967	$1,982,000
1968	2,003,000
1969	2,145,000
Change in 1969	+142,000

As projects reach the flight stage, support is required for prelaunch, launch, and postlaunch activities. The amount of travel required for this purpose is directly related to both the number and complexity of the launches. The increase is reflected in the travel requirements for the manned space flight centers to support the approved Apollo launch schedule.

Overseas travel to launch and tracking sites

1967	$708,000
1968	678,000
1969	735,000
Change in 1969	+57,000

Overseas travel to launch and tracking sites includes travel required for instrumentation of the tracking sites, inspection of the sites prior to launch, and the cost of travel of additional personnel required during launches. The increase is related to the extended Apollo flights in 1969.

Meetings and technical seminars

1967	$2,363,000
1968	1,956,000
1969	1,956,000
Change in 1969	

Travel to meetings and technical seminars permits employees engaged in program activities to participate at both Government-sponsored and non-Government-sponsored meetings and technical seminars with other outstanding representatives of the aerospace community. This participation allows personnel to benefit from exposure to advances in the field arising outside NASA, as well as allowing personnel to present both accomplishments and problems to their associates. Many of the Government-sponsored meetings are made up of working panels convened to solve certain problems for the benefit of the Government. Authorization to attend any meetings of the types described is granted only after assurance that the meeting attendance will be in the interest of NASA. The estimate for this travel in 1969 is the same as for 1968.

Administrative travel

1967	$2,546,000
1968	2,091,000
1969	2,084,000
Change in 1969	−7,000

Administrative travel includes travel for the direction and coordination of general management matters. It provides for travel by functional managers in such areas as personnel, financial management, and procurement; to assure that agency policies and procedures are being implemented and carried out properly throughout the agency. Travel by senior officials to review center requirements and operations and the travel of center officials to NASA Headquarters is provided for in this category. This category also provides for travel in and around the vicinity of the centers, including bus and taxi services and rental of motor vehicles, and travel of unpaid members of research advisory committees. The slight reduction in 1969 for travel is related to the manpower reduction at Marshall Space Flight Center, and is partially offset by an increased requirement at the Electronics Research Center to accommodate the projected manpower buildup.

OVERSEAS TRAVEL

Mr. JONAS. How much of this travel is overseas?

Mr. LILLY. Overseas program travel in the plans for fiscal year 1969 is $735,000.

Mr. JONAS. That is out of the $16.5 million?

Mr. LILLY. That is correct, sir.

Mr. JONAS. Are you covered by the President's directive?

Mr. WEBB. Yes, sir; but we have also taken exception to certain parts of it because these stations overseas are manned mostly by contractors. We have a certain amount of travel that has to be involved to maintain the systems the way we have been operating them.

AUTOMATIC DATA PROCESSING

Mr. EVINS. The third account is "Automatic data processing" which goes down $19,000 from last year. We have been talking about this for some time. You have your computers and they ought to assist you in reducing personnel.

Mr. WEBB. Mr. Chairman, could I say one thing that I believe will interest this committee? Under the Safety Review Panel which was incorporated in our authorizing legislation last year, we are organizing this board. We are also planning to set up on computers at our Lewis Laboratory a safety information storage and retrieval system.

The FAA has agreed to join with us in this and the Department of Defense; particularly the Air Force in the beginning worked with us and out of this may come an automatic access to the best safety information. This is very important in case of fires like the ones at the Military Service Academy or which the Navy has had on the carriers; so I think you are going to see a new way to use computers for this kind of thing. They will be very valuable throughout the Government.

Mr. EVINS. You state that a full discussion of the ADP requirements is found in a special ADP analysis in volume I of this budget. We will insert pages SA–8 through SA–10 which give your total ADP requirements, and pages AO1–20 through AO1–22 which pertain to the administrative operations requirements.

(The information requested is as follows:)

GENERAL STATEMENT

Overall requirements for ADP resources within NASA are still increasing but at a slower rate than in preceding years. NASA is now moving heavily into its active mission phases which necessitates increased utilization of our computers. The major factor in this increase is the extensive use of digital computers by our scientists and engineers to achieve success in missions. The computer makes possible operation in the hostile outer space environment with its requirements for high reliability, extreme precision, and rapid decisions. Computation requirements are further increased by the in-depth testing, planning, and controlling that must take place before, during, and after launch due to the very low margin for error that can be allowed.

Our uses of computers are divided into two categories. The category A, or general purpose use, includes all the machines that can service multiple users. This category includes the large, high-speed computing facilities within NASA. While it accounts for over two-thirds of the cost of computers in NASA, only one-third of the total number of computers are involved. Approximately one-half of our capacity in this category is used primarily in direct support for mission operations. The category B, or special purpose use, is unique to research and development agencies. These are primarily small computers which are integrated into an overall system in such a way as to make it impracticable to use them for other functions. Some examples of these include the computers at tracking sites, automatic checkout systems, communications switching, and other data acquisition, analysis, and control functions. Although over two-thirds of the number of computers in NASA are in category B, less than one-third of the cost is attributable to this use.

REQUIREMENTS

Category A—General Purpose

The main increase in category A requirements in fiscal year 1969 is for the mission independent or true general purpose facilities. Our scientific and engineering uses are increasing at the same rate as in previous years, and we expect this rate to continue in the future. Our scientists and engineers are becoming more adept at using this tool and more familiar with its possibilities. As more and more people become trained in the use of computers, utilization increases. The problems that can be and are solved are more complex, and greater advances are made by our scientists and engineers in their tasks. The digital computer, with its greater speed and accuracy, is now being utilized as a tool for system simulation. Previously, only analog computers could serve this function. NASA business and recordkeeping application are increasing as with all Federal agencies.

Our mission dependent computer requirements are also increasing, but very slightly. The increases are entirely in the data reduction area and are primarily the result of more complex spacecraft with increased data communications capability and heavy use of our in-house testing facilities.

Category B—Special Purpose

Our major instrumentation and checkout facilities are operational with increased requirements for fiscal year 1969 primarily for small additions to these facilities. However, we must increase our communications switching capability and our project operation support equipment. Also, there are several small computing systems required for special instrumentation facilities.

FUNDINGS

The funding of ADP equipment is given in the following tables. A one-line summary of our total costs is shown below for reference purposes (all dollar figures in thousands):

ADPE costs

1967	$81,617
1968	75,630
1969	69,984

As shown, the overall costs are reflecting declines between fiscal years. The small fluctuations of lease and purpose dollars are primarily caused by minor reconfiguring of systems in our conversion to third-generation equipment and the continuous search for those components which prove advantageous for Government purchase. It should be noted that the rise in maintenance costs is caused by our growing capital investment in computers, with this maintenance cost reaching 10 percent of our estimated fiscal year 1969 ADPE funds. Part of the purchase costs in fiscal year 1968 and 1969 are for procurements made in previous years, where capital investment costs have been spread out to match actual implementation dates.

NASA has constantly stressed better management of our ADP resources at the field centers that will result in higher utilization of our equipment with the least possible cost. We continually strive to meet our increasing requirements for this vital ADP resource while operating within an austerity environment. The accommodation of the large requirements, coupled with the decreasing overall ADP equipment costs, is considered a major accomplishment by NASA.

SUMMARY OF AUTOMATIC DATA PROCESSING REQUIREMENTS, FISCAL YEAR 1967-69

[In thousands of dollars]

	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Office of Manned Space Flight	40,031	36,786	36,424
Kennedy Space Center	4,352	2,982	3,194
Manned Spacecraft Center	23,500	22,714	23,956
Marshall Space Flight Center	12,179	11,090	9,274
Office of Space Science and Applications	30,229	29,690	23,238
Goddard Space Flight Center	19,887	20,010	15,739
Jet Propulsion Laboratory	10,157	9,362	6,975
Wallops Station	185	318	524
Office of Advanced Research and Technology	10,908	8,481	9,480
Ames Research Center	2,360	2,146	3,045
Electronics Research Center	350	1,491	1,000
Flight Research Center	136	428	334
Langley Research Center	7,259	3,715	4,280
Lewis Research Center	490	289	345
Space Nuclear Propulsion Office	313	412	476
Headquarters	449	673	842
Total	81,617	75,630	69,984

EXPLANATORY NOTE

Purchase funds shown in the following tables cover peripheral equipment required to augment onboard computers as well as acquisition of additional complete machines; and purchases of complete computers may result in installation of new machines in the same or future years. Therefore, purchasing activity in a given year does not ordinarily result in corresponding changes in the same year's owned inventory of complete computers.

FISCAL YEAR 1969 ESTIMATES

Automatic data processing

1967	$36,919,000
1968	31,506,000
1969	31,487,000
Change in 1969	−19,000

DESCRIPTION

The funds budgeted in this category provide for the acquisition of automatic data processing (ADP) equipment by lease or purchase, maintenance of NASA-owned equipment, and the procurement of programing and operation services. Both electronic data processing and ancillary electric accounting machine equipments are included. The overall requirement for ADP is divided by appropriation in accordance with the purpose serviced by the equipment. The administrative operations appropriation provides for the general purpose, scientific and business data processing which support the overall installation operations. Other appropriations provide for data processing systems and operations which are dedicated to specific programs or projects, or are integrated into larger systems. A full discussion of total ADP requirements is found in the special ADP analysis which appears in volume I of this budget.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$1,302,000	$1,200,000	$1,320,000
Manned Spacecraft Center	6,430,000	6,843,000	6,843,000
Marshall Space Flight Center	10,620,000	9,486,000	9,094,000
Goddard Space Flight Center	7,284,000	5,897,000	5,916,000
Wallops Station	91,000	75,000	75,000
Ames Research Center	1,819,000	1,544,000	1,544,000
Electronics Research Center	1,031,000	1,273,000	1,366,000
Flight Research Center	103,000	51,000	51,000
Langley Research Center	6,557,000	3,515,000	3,515,000
Lewis Research Center	463,000	293,000	349,000
Space Nuclear Propulsion Office	26,000		
NASA Headquarters	1,193,000	1,329,000	1,414,000
Total	36,919,000	31,506,000	31,487,000

BASIS OF FUND REQUIREMENTS

SUMMARY OF AUTOMATIC DATA PROCESSING

	1967	1968	1969	Change in 1969
Lease of equipment	$18,532,000	$19,630,000	$20,314,000	+$684,000
Purchase of equipment	5,420,000	33,000	25,000	−8,000
Maintenance of equipment	1,542,000	1,863,000	1,560,000	−303,000
Subtotal, equipment	25,494,000	21,526,000	21,899,000	+373,000
Programing and operation services	11,425,000	9,980,000	9,588,000	−392,000
Total, automatic data processing	36,919,000	31,506,000	31,487,000	−19,000

The lease requirements for ADP equipment represent approximately 65 percent of the total ADP costs funded from the "Administrative operations" appropriation. The estimate for 1969 is $684,000 higher than the amount required in 1968. Of this increase, $302,000 is required at the Goddard Space Flight Center to provide for the overlap of leased peripheral equipment during the final installment of third-generation equipment, procured in prior years, and the continuation of the phaseout of the second generation equipment. The balance of the increase is required at the Kennedy Space Center ($120,000), Electronics Research Center ($127,000), Lewis Research Center ($64,000), and headquarters ($85,000). The costs at all other installations are estimated to remain essentially the same in 1969. The increase for Kennedy Space Center of $120,000 is due to the phase-in of a third-generation computer, and will, when it becomes fully programed and operational, replace two IBM 7010 computers. The increase of $127,000 at the Electronics Research Center is required to provide peripheral equipment to support the installation there of a NASA-owned computer released from the Goddard Space Flight Center in 1968. The other increases in leased costs are required to support increased workload requirements at the Lewis Research Center and headquarters.

Purchase of equipment

1967	$5,420,000
1968	33,000
1969	25,000
Change in 1969	−8,000

The requirement for equipment to be purchased in 1969 amounts to $25,000 and is $8,000 less than the amount for purchase in 1968. The entire amount is required at Flight Research Center for a disk drive to be added to a general purpose computer system, and is required to handle the increased data reduction generated by the additional aircraft being tested at the Center.

Maintenance of equipment

1967	$1,542,000
1968	1,863,000
1969	1,560,000
Change in 1969	−303,000

The funds required for ADP maintenance will be $303,000 less than the amount required in 1968. The decreases occur at the Goddard Space Flight Center ($273,000) and at the Marshall Space Flight Center ($30,000), and all other installations' costs will be constant in 1969.

Programing and operational services

1967	$11,425,000
1968	9,980,000
1969	9,588,000
Change in 1969	−392,000

In 1969, the cost of contractor programing and operation services which are related to the larger and more sophisticated systems in operation are more than offset by the peaking in 1967 of costs related to the changeover of equipment. The largest decrease ($348,000) occurs at the Marshall Space Flight Center as a result of the centralization and consolidation of automatic data processing capability associated with the installation of third-generation equipment. All other centers will be at the 1968 level, except the Electronics Research Center, where there is a reduction of $34,000.

FACILITIES SERVICES

Mr. EVINS. Gentlemen, the next item is "Facilities services." That goes up $2,293,000. From $92,635,000 to $94,928,000.

Facilities services includes the rental of lands and buildings, the procurement of electricity, water, gas, and other utilities; and maintenance of buildings and grounds, and minor construction and facility modifications. It also includes custodial services consisting of security services, janitorial services, cleaning, exterminating and refuse handling, laundry, and fire protection. Funds required also provide for the maintenance and repair of general purpose instruments, research equipment, and shop equipment. Requirements for general purpose building materials, hardware, and electronics supplies and materials, as well as procurement of mechanical, laboratory and shop equipment are also included in the estimate. The requirement for major contractual service effort at the Merritt Island launch area and reimbusement to the Air Force for services provided to the Kennedy Space Center are also included in this category.

Why the increase of $2,293,000?

BREAKDOWN OF INCREASE

Mr. LILLY. The increase occurs in two places. All others are at the same or below. Part of the increase is $1.9 million at the Kennedy Space Center and is tied in directly with the increase in the range operations at that center as we move into the Apollo launches.

Mr. EVINS. Tell us again how much this is.

Mr. LILLY. Yes, sir. All of the costs of the range contractors at KSC; yes, sir.

Mr. EVINS. How much is that?

Mr. LILLY. The total at KSC is $45,305,000, $41,505,000 of which is for range operations.

Mr. EVINS. What about the increase?

Mr. LILLY. That is $1.9 million.

Mr. EVINS. Where is the other increase?

Mr. LILLY. An increase for another $936,000 is the Electronics Research Center in Cambridge and that is related to the buildup of the center. The increase of $1.9 million at KSC and the $936,000 at the Electronics Research Center have been partially offset by decreases at other locations for a net increase of $2.3 million.

Mr. JONAS. Are you not occupying it yet?

RENTAL SPACE AT ERC

Mr. LILLY. This also pays for the rental space and the utilities, et cetera, at the center.

Mr. JONAS. Is the rent going up?

Mr. LILLY. No.

Mr. JONAS. You haven't moved in the center yet?

Mr. LILLY. No, but we are occupying rental space, Mr. Jonas.

Mr. JONAS. I know, but you have been doing that. Why is it up?

Mr. LILLY. It is up as we have increased the personnel at the center, Mr. Jonas. We have increased the rental space.

Mr. JONAS. You have been increasing your space then?

Mr. LILLY. Yes, sir.

Mr. JONAS. Your rental space?

Mr. LILLY. Yes, sir.

Mr. WEBB. We are in a phased buildup there over 5 years. The rate of increase has been substantially reduced, but we still are proceeding at a very slow rate of increase and bringing more laboratory space into operation, Mr. Jonas, than we had before.

RENTS AND UTILITIES

Mr. EVINS. You have 17 facilities, but you have a large rent and utility bill.

Most of these are operated under contract, are they not, Mr. Administrator?

Mr. WEBB. A great many are, but remember, there is a $4 billion capital plant here, Mr. Chairman. Even Cape Kennedy itself represents a $1 billion investment, so this is not out of line.

Mr. EVINS. You show increases in the Kennedy Space Center, the Manned Spacecraft Center and the Electronics Center; you also show some reduction from last year, but the total increase is $2,293,000.

Place pages AO 1–23 through 1–28 in the record.
(The pages follow:)

FACILITIES SERVICES

	1967	1968	1969	Change in 1969
Facilities services	$106,209,000	$92,635,000	$94,928,000	+$2,293,000

Description:

Facilities services includes the rental of lands and buildings, the procurement of electricity, water, gas, and other utilities; and maintenance of buildings and grounds, and minor construction and facility modifications. It also includes custodial services consisting of security services, janitorial services, cleaning, exterminating and refuse handling, laundry and fire protection. Funds required also provide for the maintenance and repair of general purpose instruments, research equipment, and shop equipment. Requirements for general purpose building materials, hardware, and electronics supplies and materials, as well as procurement of mechanical, laboratory and shop equipment are also included in the estimate. The requirement for major contractual service effort at the Merritt Island Launch Area and reimbursement to the Air Force for services provided to the Kennedy Space Center are also included in this category.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$47,801,000	$43,403,000	$45,305,000
Manned Spacecraft Center	12,647,000	10,861,000	11,047,000
Marshall Space Flight Center	11,419,000	9,298,000	8,741,000
Goddard Space Flight Center	8,110,000	5,634,000	5,432,000
Wallops Station	3,142,000	2,310,000	2,345,000
Ames Research Center	3,932,000	3,191,000	3,174,000
Electronics Research Center	1,971,000	2,007,000	2,943,000
Flight Research Center	1,161,000	1,162,000	1,263,000
Langley Research Center	6,452,000	6,077,000	6,247,000
Lewis Research Center	8,602,000	7,926,000	7,744,000
Space Nuclear Propulsion Office			
NASA Headquarters	972,000	766,000	682,000
Total	106,209,000	92,635,000	94,928,000

BASIS OF FUND REQUIREMENTS

SUMMARY OF FACILITIES SERVICES

	1967	1968	1969	Change in 1969
Acquisition of facilities:				
Rental of real property	$1,822,000	$1,975,000	$2,611,000	+$636,000
Minor construction and modifications	5,846,000	1,692,000	1,488,000	−204,000
Subtotal	7,668,000	3,667,000	4,099,000	+432,000
Maintenance and related services:				
Maintenance, repair, and alteration of buildings and grounds	14,979,000	13,150,000	13,004,000	−146,000
Maintenance and repair of equipment	3,296,000	3,127,000	3,094,000	−33,000
Custodial services	11,355,000	9,988,000	9,974,000	−14,000
Subtotal	29,630,000	26,265,000	26,072,000	−193,000
Operations of facilities:				
Utilities	11,861,000	12,361,000	12,634,000	+273,000
Supplies and equipment	14,078,000	11,037,000	10,618,000	−419,000
Subtotal	25,939,000	23,398,000	23,252,000	−146,000
Range operations	42,972,000	39,305,000	41,505,000	+2,200,000
Total, facilities services	106,209,000	92,635,000	94,928,000	+2,293,000

	1967	1968	1969	Change in 1969
Rental of real property	$1,822,000	$1,975,000	$2,611,000	+$636,000

Rental of land and property is required to house personnel and provide storage and warehouse space for supplies and materials where space is not available in Government-owned facilities. Funds required for this purpose are estimated at $2,611,000 in 1969, an increase of $636,000 over the 1968 estimate. The major increases are at Goddard Space Flight Center ($193,000) as a result of higher rental cost to provide additional and more adequate offsite office and laboratory space, and at the Electronics Research Center ($500,000) which reflects the projected buildup in manpower and laboratories during 1969.

	1967	1968	1969	Change in 1969
Minor construction and modifications	$5,846,000	$1,692,000	$1,488,000	−$204,000

This activity provides for additions, modifications, and minor construction of facilities within statutory limitations. The requirements are of a continuing nature which are generated by changes in the research and development program, as well as development of new technology. The 1969 estimate is reduced $204,000 due mainly to reductions at Goddard Space Flight Center and at the manned space flight centers. The decrease at Goddard Space Flight Center is due to the completion of the current phase of the Center housing plan. The decreases at the manned space flight centers reflect the completion of much of the planned minor construction. Increases include $75,000 at the Flight Research Center for the storage of aircraft parts and other maintenance materials, and $50,000 at Wallops Station for minor repair projects.

	1967	1968	1969	Change in 1969
Maintenance, repair, and alterations of buildings and grounds	$14,979,000	$13,150,000	$13,004,000	−$146,000

The amount required for maintenance and repair of buildings and grounds is estimated at $13,004,000, a decrease of $146,000 from 1968. Most of the reduction is reflected in the cutback in operations at the Marshall Space Flight Center and the decision to defer selected maintenance, repair, and alterations of buildings and grounds at Goddard Space Flight Center. The requirements at the rest of the Centers remain at relatively the same level as 1968.

	1967	1968	1969	Change in 1969
Maintenance and repair of equipment	$3,296,000	$3,127,000	$3,094,000	−$33,000

Maintenance and repair consists of work necessary to keep mechanical laboratory and shop equipment operational. The net reduction of $33,000 is a result mainly of a decrease of $158,000 at Marshall Space Flight Center due to the cutback in operations, and the increase of $119,000 at the Electronics Research Center compatible with the increased activity expected in 1969.

	1967	1968	1969	Change in 1969
Custodial services	$11,355,000	$9,988,000	$9,974,000	−$14,000

The requirement for custodial services decreases by $14,000 in 1969 as compared to 1968. This change is the result of several small offsetting increases and decreases.

	1967	1968	1969	Change in 1969
Utilities	$11,861,000	$12,361,000	$12,634,000	+$273,000

Funds required for utilities will increase in 1969 by $273,000 to a total of $12,634,000. The increase is primarily at the research centers. The increase at Langley Research Center ($135,000) is required in order to operate facilities there at the level required to carry out the R. & D. program assigned to Langley Research Center. The other major increase will be at the Manned Spacecraft Center as a result of a full year's operation of new facilities and extended mission operations support. Other changes are minor with the exception of the Lewis Research Center where a decrease of $69,000 will be made in the use of electrical power in 1969.

	1967	1968	1969	Change in 1969
Supplies and equipment	$14,078,000	$11,037,000	$10,618,000	−$419,000

The requirement for supplies and equipment in 1969 represents a decrease of $419,000. The major changes occur at the Research and the Manned Space Flight Centers. A decrease will be made at Lewis Research Center primarily through the reduction of inventories. Other decreases are at Kennedy Space Center because of a reduction in requirements for alterations of facilities, and at Marshall Space Flight Center due to a cutback in personnel and operations. These decreases are partially offset by an increase at the Electronics Research Center where an additional $168,000 is required to stock and operate the additional laboratory facilities.

	1967	1968	1969	Change in 1969
Range operations	$42,972,000	$39,305,000	$41,505,000	+$2,200,000

Over 40 percent of the estimate for all of NASA facilities services relates to services procured at the Kennedy Space Center through major support contractors for services, utilities, and for support received from the Air Force Eastern Test Range. Services received through contractors are primarily utilized at the Merritt Island launch area. These services are provided by three major support contractors, and cover facilities engineering and planning, maintenance, repair, and operation of facilities and utilities, maintenance of roads and grounds, supply operations, fire protection, industrial health services, security, computer operations, publication and graphic support, photography and library services. Reimbursements to the Air Force, except for utilities, are primarily for requirements at the Cape Kennedy Air Force Station complex, including maintenance and repair of buildings and equipment, security, exterminating, printing, medical services, photography, and supply support. For convenience in understanding the requirement, these requirements are consolidated under facilities services, and not distributed to other categories. The estimate for range operations in 1969 is $41.5 million, an increase of $2.2 million over 1968. During 1968, the transition from the activation and initial occupancy activity at launch complex 39 was accomplished. The following table summarizes funding requirements by purpose:

	1967	1968	1969	Change in 1969
ADP operations	$2,838,000	$2,453,000	$2,800,000	+$347,000
Utilities	3,632,000	3,775,000	3,936,000	+161,000
Maintenance, repair, alteration, and operation of facilities	16,836,000	15,823,000	15,862,000	+39,000
Custodial services	5,481,000	4,868,000	5,848,000	+980,000
Engineering services	1,153,000	1,000,000	850,000	−150,000
Support services	13,032,000	11,386,000	12,209,000	+823,000
Total	42,972,000	39,305,000	41,505,000	+2,200,000

The increases related to ADP operations, maintenance and operation of facilities, custodial services and support services are due to the resumption of launch activity which was interrupted by the Apollo 204 accident. The anticipated build-up in range operations was delayed after the accident. This delay was in effect for half of 1968. The currently approved launch schedule requires more intensive activity, particularly at Launch Complex 39, during the last half of 1968, and the activity level reached by the end of the year will continue through 1969. The estimate for 1969 represents the cost of continuing this level of activity for the year.

Funds required for utilities at Kennedy Space Center will increase by $161,000. This increase is required for electricity and relates to increased Launch Complex 39 operations and the occupancy of two new wing additions to the KSC Headquarters Building.

A decrease of $150,000 in engineering services reflects reduced requirements for design of facility modifications as Apollo hardware configurations and support requirements are determined.

TECHNICAL SERVICES

Mr. EVINS. We will look at the technical services. It goes down from $18,790,000 to $18,785,000. You have a slight reduction in technical services.

Place pages AO 1–29 through 1–33 in the record.

(The pages follow:)

TECHNICAL SERVICES

	1967	1968	1969	Change in 1969
Technical services	$23,689,000	$18,790,000	$18,785,000	−$5,000

DESCRIPTION

The estimate for technical services provides for the costs of engineering services, and of scientific and technical information and educational/informational programs. Included in engineering services are the costs of engineering design and reliability and quality assurance studies. The scientific and technical information programs, which furnish up-to-date reporting of scientific and technical programs, provide for the support of the technical libraries located at various installations, the acquisition and dissemination of scientific and technical literature, and for educational/informational programs.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$1,256,000	$834,000	$834,000
Manned Spacecraft Center	4,438,000	2,664,000	2,366,000
Marshall Space Flight Center	1,365,000	746,000	736,000
Goddard Space Flight Center	90,000	93,000	89,000
Wallops Station	205,000	70,000	70,000
Ames Research Center	554,000	704,000	636,000
Electronics Research Center	80,000	88,000	83,000
Flight Research Center	310,000	310,000	310,000
Langley Research Center	865,000	671,000	670,000
Lewis Research Center	66,000	10,000	71,000
Space Nuclear Propulsion Office	14,460,000	12,600,000	12,920,000
NASA Headquarters			
Total	23,689,000	18,790,000	18,785,000

BASIS OF FUND REQUIREMENTS

SUMMARY OF TECHNICAL SERVICES

	1967	1968	1969	Change in 1969
Engineering services:				
Reliability and quality assurance studies	$603,000	$424,000	$424,000	
Engineering design	1,833,000	958,000	618,000	−$340,000
Other	1,185,000	912,000	996,000	+84,000
Subtotal	3,621,000	2,294,000	2,038,000	−256,000
Scientific and technical information and educational programs:				
Operation of NASA technical library	2,733,000	2,243,000	2,263,000	+20,000
Educational/information programs	5,982,000	4,359,000	4,480,000	+121,000
Scientific and technical information	11,353,000	9,894,000	10,004,000	+110,000
Subtotal	20,068,000	16,496,000	16,747,000	+251,000
Total	23,689,000	18,790,000	18,785,000	−5,000

	1967	1968	1969	Change in 1969
Engineering services	$3,621,000	$2,294,000	$2,038,000	−$256,000

Engineering services provide for reliability and quality assurance studies, engineering design, and other related costs. The estimated costs in 1969 are $2,294,000, which is $256,000 less than in 1968.

	1967	1968	1969	Change in 1969
Reliability and quality assurance studies	$603,000	$424,000	$424,000	

The cost for reliability and quality assurance will be $424,000 in 1969, the same as 1968. These funds will provide for the operation of the Reliability and Quality Assurance Training School operated by Marshall Space Flight Center, and the development of reliability methodology guidelines and for studies of integrated testing and system design trade-off analyses.

	1967	1968	1969	Change in 1969
Engineering design	$1,833,000	$958,000	$618,000	−$340,000

Engineering design provides for the design of minor construction projects, repair and alteration requirements, special tools, equipment, and machine parts. The costs for 1969 are $618,000, which represent a decrease of $340,000 under the $958,000 estimated for 1968. The largest decrease, $225,000, is identified with Marshall Space Flight Center's discontinuance of support contractor effort for engineering design services. The other major reduction is at the Electronics Research Center, as a result of curtailment of equipment and integration studies.

	1967	1968	1969	Change in 1969
Other	$1,185,000	$912,000	$996,000	+$84,000

Other engineering services requirements include such special services as the nuclear safety effort at the Plum Brook reactor, and studies essential to the operation of the Nuclear Rocket Development Station (NRDS) in Nevada. The estimated costs will be $84,000 more in 1969 than in 1968. The largest portion of the increase, $61,000 is related to requirements for additional special studies at NRDS due to the anticipated 1969 R. & D. program to be carried on there. The other increase is a net amount reflecting minor increases and decreases at various other centers.

	1967	1968	1969	Change in 1969
Scientific and technical information and educational programs	$20,068,000	$16,496,000	$16,747,000	+$251,000

Included in these programs are the costs of the technical libraries, educational/information programs and the scientific and technical information services. The funding required to finance these programs is $16,747,000 in 1969, an increase of $251,000 over 1968.

	1967	1968	1969	Change in 1969
Operation of technical libraries	$2,733,000	$2,243,000	$2,263,000	+$20,000

The cost of the operation of technical libraries in 1969 will be $2,263,000, which is an increase of $20,000 over 1968. This increase is required to support the Electronics Research Center library at a level commensurate with its larger complement.

	1967	1968	1969	Change in 1969
Educational/informational programs	$5,982,000	$4,359,000	$4,480,000	+$121,000

The educational/informational programs, which will cost $4,480,000 in 1969, provide for a scope of activities designed to disseminate information about the space program, and its results, as widely as practicable, as directed in the Space Act. The activities include the gathering and exposition of newsworthy material for the mass communications media, and providing information and support in response to their requests. Other activities are designed to serve the expressed needs of students through the secondary level, and their teachers. Of these activities, the spacemobile program, a touring lecture-demonstration, is the most extensive. The 30 mobile units, each of which is manned by a qualified and experienced teacher, are used in about 11,000 lecture-demonstrations a year. Most of these are to in-school groups, and over 400 were for teachers at workshops and other in-service training sessions. It is estimated that over 2.5 million people a year attend spacemobile lectures, and an additional 11.5 million see or hear the lectures on radio and TV.

Information about results of the space program is also made available to the educational community through (1) development of space-related materials of instruction to supplement the regular course materials; (2) assistance with almost 500 teacher workshops and professional education conferences; (3) sponsorship of the Youth Science Congresses in cooperation with the National Science Teachers Association; and (4) participation in science fairs and other motivational programs.

Publications, motion pictures, and exhibits are the other media used to communicate information about how space is being explored and what is being learned. Publications and motion pictures provide the primary resource materials which are drawn upon most by students and teachers. Information in all three

forms is also available to the general public, and to the many special audiences seeking information about aerospace research and technology.

About 3,500,000 copies of publications are distributed each year, most in response to written inquiries received from teachers, students, and the general public. Publications are also made available through the spacemobile program, and handed out to visitors at exhibits and at NASA installations.

Schools at the elementary and secondary level make up about 80 percent of the live viewing audience of over 4 million for NASA films. The remainder is divided about equally between higher education and teacher training, and civic and community group audiences. It is estimated that over 50 million people a year view NASA motion pictures made available by request to television stations.

Exhibits at over 700 showings were seen by almost 34 million persons, not including Expo 67 or the Paris Air Show.

	1967	1968	1969	Change in 1966
Scientific and technical information	$11,353,000	$9,894,000	$10,004,000	+$110,000

The scientific and technical information activity includes the cost of the NASA Scientific and Technical Information Facility, documentation services, manuscript preparation, systems development, and translation services. These services are estimated to cost $10 million in 1969, which is approximately $0.1 million higher than required in 1968. The largest requirement is the NASA Scientific and Technical Information Facility under the cognizance of Headquarters, which will cost $5.4 million in 1969. This is an increase of $0.2 million over the 1968 costs and is required because of the additional number of scientific and technical reports becoming available from research and development programs. The level of cost for all other information services, estimated at $4.6 million, is slightly below 1968. These costs are for the documentation of worldwide aerospace journal literature; the preparation of manuscript material such as handbooks, data compilations, monographs, and technical reviews; analyzing, evaluating, and testing new methods and systems in the field of scientific communications to increase the effectiveness of the technical information program; and translating foreign-language technical books, reports, and journal articles required to meet the needs of NASA and its contractor scientific personnel which are used to keep abreast of world developments in the space sciences and related fields.

ADMINISTRATIVE SUPPORT

Mr. Evins. You have administrative support on page 34. It goes down to $43,968,000, a $908,000 decrease. This provides service for overall support of installations. This is communications, printing, reproduction, supplies, materials, equipment, motor pool, movement by common carriers, and other services.

Place pages AO 1–34 through 1–38 in the record.

(The pages follow:)

ADMINISTRATIVE SUPPORT

	1967	1968	1969	Change in 1969
Administrative support services	$47,858,000	$44,876,000	$43,968,000	−$908,000

DESCRIPTION

Included in Administrative Support Services are general services which support overall installation operations. The administrative expenses for com-

munications, printing and reproduction, supplies, materials and equipment, transportation (motor pool, administrative aircraft services and operations, and movements by common carrier), and other services (installation operations and medical services), are provided in this section of the budget estimate.

DISTRIBUTION OF FUND REQUIREMENTS BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$9,664,000	$10,726,000	$10,287,000
Manned Spacecraft Center	11,229,000	9,605,000	9,532,000
Marshall Space Flight Center	8,867,000	7,641,000	7,078,000
Goddard Space Flight Center	4,591,000	4,077,000	3,819,000
Wallops Station	1,117,000	961,000	926,000
Ames Research Center	1,104,000	1,022,000	1,022,000
Electronics Research Center	946,000	917,000	1,221,000
Flight Research Center	849,000	722,000	747,000
Langley Research Center	2,611,000	2,279,000	2,259,000
Lewis Research Center	1,469,000	1,313,000	1,274,000
Space Nuclear Propulsion Office	4,000		
NASA headquarters	5,407,000	5,613,000	5,803,000
Total	47,858,000	44,876,000	43,968,000

BASIS OF FUND REQUIREMENTS

SUMMARY OF ADMINISTRATIVE SUPPORT SERVICES

	1967	1968	1969	Change in 1969
Communications:				
Leased lines and long-distance tolls	$4,632,000	$4,876,000	$4,944,000	+$68,000
Local telephone service	5,588,000	6,259,000	6,088,000	−171,000
Other communications	1,485,000	1,743,000	1,959,000	+216,000
Subtotal	11,705,000	12,878,000	12,991,000	+113,000
Administrative printing	5,558,000	5,267,000	5,270,000	+3,000
Supplies, materials, and equipment:				
Supplies and materials	9,746,000	7,591,000	7,159,000	−432,000
Equipment	3,278,000	2,819,000	2,591,000	−228,000
Subtotal	13,024,000	10,410,000	9,750,000	−660,000
Transportation:				
Center operations	6,497,000	6,318,000	5,897,000	−421,000
Common carrier	1,813,000	1,733,000	1,748,000	+15,000
Subtotal	8,310,000	8,051,000	7,645,000	−406,000
Administrative support services:				
Installation support services	7,905,000	6,762,000	6,789,000	+27,000
Medical services	1,356,000	1,508,000	1,523,000	+15,000
Subtotal	9,261,000	8,270,000	8,312,000	+42,000
Total, administrative support services	47,858,000	44,876,000	43,968,000	−908,000

	1967	1968	1969	Change in 1969
Communications	$11,705,000	$12,878,000	$12,991,000	+$113,000

The funds required for communications include the cost of leased lines, long distance tolls, local telephone exchange services, and other communications; such as, TWX, telegraph, and postage. Installations and their major subinstallations are located in 12 States and the District of Columbia. In addition, business is conducted with companies and institutions in all the States. Consequently,

the cost of communications to integrate these centers of work is large. It should be noted that operational communications related to flight activities and dedicated leased lines are not funded in the administrative operations appropriation, but are included in the estimates for research and development.

	1967	1968	1969	Change in 1969
Leased lines and long-distance tolls	$4,632,000	$4,876,000	$4,944,000	+$68,000

The cost of leased lines and long-distance tolls provide for the intercity telephone services for the various installations. The cost of leased lines includes the leasing of the circuits and associated equipment for rapid and reliable contact with contractor plants and other key sites. Long-distance toll costs are in addition to the cost of leased lines and include both commercial tolls and reimbursement to the General Services Administration for NASA's use of the Federal Telecommunications System. The increase in requirements of $68,000 is largely at the Manned Spacecraft Center and is related to the expanded Apollo flight activity.

	1967	1968	1969	Change in 1969
Local telephone service	$5,588,000	$6,259,000	$6,088,000	−$171,000

Local telephone service includes not only the cost of providing onsite telephone exchange services, but also the cost of offsite service in the area immediately surrounding our installations. The amount of service provided each installation is determined by the number of personnel, both civil service and contractor, served by the exchange. The decrease in 1969 is largely related to the reduction in the number of new telephone installations and moves required at the Kennedy Space Center. In 1968 there were significant costs for this activity related to the internal rearrangement of staff in the Manned Spacecraft Operations Building, and initial occupancy of wings recently added to the KSC Headquarters Building. This decrease is partially offset by a small increase at the Electronics Research Center related to their increased staff.

	1967	1968	1969	Change in 1969
Other communications	$1,485,000	$1,743,000	$1,959,000	+$216,000

Other communications costs provide for costs for cable services, TWX services, and postage. The increase in 1969 is principally related to the increased cost of postage caused by the postal rate increases made effective in January 1968.

	1967	1968	1969	Change in 1969
Administrative printing	$5,558,000	$5,267,000	$5,270,000	+$3,000

Estimates for administrative printing include funds for contractual printing and the related composition and binding operations. This includes services performed by other agencies, chiefly the Government Printing Office, or by

commercial printing firms. All common processes of duplicating, including photostating, blueprinting, microfilming, and other photographic reproduction, are included. In 1969, the costs for printing are about the same as in 1968.

	1967	1968	1969	Change in 1969
Supplies, materials, and equipment	$13,024,000	$10,410,000	$9,750,000	−$660,000

Administrative supplies, materials, and equipment include those items of a general nature which service the entire installation. Excluded are supplies, materials, equipment, and related services which are related directly to a specific project (funded in the R. & D. appropriation) and those that are facility oriented (included in facilities services). Of the amount required in 1969, $7,159,000 is for supplies and materials, and $2,591,000 for purchased and rented equipment. The overall requirement decreases by $660,000 in 1969, with the largest part of the decrease ($476,000) at the Marshall Space Flight Center related to the cutback in personnel and operations in 1968. The other significant reduction ($194,000) at the Kennedy Space Center, is related to the completion of the buildup in 1968 and the stabilization of requirements in 1969. Other changes are minor with the exception of an increase at the Electronics Research Center of $94,000 which is due to the buildup of personnel and operations and a decrease of $30,000 at Wallops Station.

	1967	1968	1969	Change in 1969
Transportation	$8,310,000	$8,051,000	$7,645,000	−$406,000

Transportation services include local motor pool operations and associated services, center aircraft operations and services, as well as the movement of supplies, materials, equipment, and related items by common carrier. Center operations costs of $5,897,000, are $421,000 lower in 1969 than in 1968. The net reduction results from a decrease of $204,000 at Goddard Space Flight Center as a result of purchasing fewer motor vehicles and the conversion of a portion of the on-site driver-messenger services contract to civil service operation, and a decrease of $134,000 at the manned space flight centers because of reduced requirements for aircraft servicing and motor pool operations. The aircraft servicing decreases at the Kennedy Space Center because of the engine overhaul on the Gulfstream in 1968, will not be required in 1969. Motor pool operations at the Manned Spacecraft Center and the Marshall Space Flight Center decrease because of reduced requirements.

Transportation by common carrier, for which $1,748,000 is required in 1969, provides for the shipment costs for the movement of supplies, materials, equipment, and other items such as NASA exhibits. Funds required remain about the same in 1969 as in 1968.

	1967	1968	1969	Change in 1969
Administrative support services	$9,261,000	$8,270,000	$8,312,000	+$42,000

Administrative support services include installation support services and center medical services. The funding required for 1969 is $8,312,000, which is $42,000 more than in 1968. The increase at the Electronics Research Center ($146,000) is partially offset by decreases at the Manned Spacecraft Center ($42,000) and the Kennedy Space Center ($45,000). The other changes are minor.

	1967	1968	1968	Change in 1969
Installation support services	$7,905,000	$6,762,000	$6,789,000	+$27,000

Installation support services include those services which support the installation generally; such as, logistics support, radiation control, supply operations, mail and messenger services, rigging, and related services. The increased requirement at the Electronics Research Center of $100,000 related to the build-up at that center is partially offset by decreases at other centers.

	1967	1968	1969	Change in 1969
Medical services	$1,356,000	$1,508,000	$1,523,000	+$15,000

Medical services include the cost of the installations' health units and of employee health maintenance programs. The cost in 1969 increases slightly, by $15,000, because the increase ($46,000) at the Electronics Research Center related to the increased staffing is partially offset by a decrease ($31,000) at headquarters.

JET PROPULSION LABORATORY

Mr. EVINS. We will suspend until tomorrow, at which time I will be very much interested in looking over your facilities. Your Jet Propulsion Laboratory is operated by Cal-Tech; isn't it?

Mr. WEBB. Yes, sir.

Mr. EVINS. This is a contract operation. It seems to me there have been great achievements there.

Mr. TALCOTT. May I ask a question about contracts in general?

Mr. EVINS. Yes, Mr. Talcott.

RENEGOTIATION BOARD

Mr. TALCOTT. Are you subject to the Renegotiation Board practices to check for excess profits?

Mr. WEBB. Our contractors are. The Board's concern doesn't run to the agency, but to the business and the percentage of business.

Mr. EVINS. Total business over $1 million. The Board looks to contractors and not to the agency?

Mr. WEBB. But the NASA contracts are considered by the Board in examining a contractor's rate of profit.

CONTRACTORS' EXPERIENCE

Mr. TALCOTT. Could you give us any general expression of the experience that your contractors have had with the Renegotiation Board?

Mr. WEBB. Yes. In general we have had a number of areas of difficulty for the reason that we do not have large production contracts. We have contracts for a small number of items; a substantial amount of research and development is involved.

We are very early in experimenting with incentive contracts, such as the McDonnell-Douglas Gemini contract, in which we developed three integrated incentive patterns that had to work together. The end result was to about double the company's profit but to save the Government $80 million.

Now, we feel the Renegotiation Board may have a tendency to lump all of these incentives together, whether for R. & D. or production runs. We feel that where a company develops this kind of capability under these powerful and high-risk incentives on complex R. & D. contracts which required a basic reorganization of much of the company's operations, they should be entitled to a higher rate of profit and indeed these earned incentives should be retained by the contractor. So we are in the process of looking over all of this to insure that the incentives provided, which save the Government money, are not diluted.

Now, another area where we have had some concern is the tendency of the Board to examine all of the newspaper reports and other public documents with respect to the performance of the contractors.

INCENTIVE CONTRACTS

We have a process of identifying a great many problems before the launch of a big system and then to work those problems out. There should be no tendency to say, "The fact you had a problem at all tends to mean the contractor did not do a good job." This is not in fact true. The purpose of the joint exercise is to identify precisely what the problem is, to fix it, and to move ahead. I will give you a quick illustration of this. The titanium tanks on one of our stages were cleaned with methyl alcohol and as a result of this certain deposits were formed on the weldments. We went through three or four different tests under very high pressure and they failed on the fourth or fifth test, destroying the vehicle.

Now, no one knew up to that time that the material used in the welding would be attacked by a substance like methyl alcohol. It turned out later that some of the welding material used by a subcontractor was not up to specifications.

Now, when you get into this kind of a complex situation and you have incentive contracts, we are very concerned that the Renegotiation Board take into account the reality of the total situation. So we do have problems of this kind, mainly because we believe we ought to pay these contractors higher than normal rates of profit in order to get them to do this advanced R. & D. work where there is going to be little or no production follow-on that they could make profits on.

Mr. TALCOTT. Thank you.

Mr. EVINS. Gentlemen, we will suspend until 10 o'clock tomorrow. Thank you, Mr. Webb.

ADMINISTRATIVE OPERATIONS

PROGRAM AND FINANCING

[In thousands of dollars]

		Budget plan			Costs and obligations		
		1967 actual	1968 estimate	1969 estimate	1967 actual	1968 estimate	1969 estimate
	Program by activities:						
	Direct program:						
	1. Manned space flight	324,459	323,743	322,753	323,019	324,825	323,752
	2. Scientific investigations in space	78,412	71,577	72,808	78,066	71,813	73,029
	3. Space applications	18,719	19,966	20,395	18,637	20,029	20,458
	4. Space technology	143,609	139,863	144,435	142,970	140,328	144,882
	5. Aircraft technology	48,466	52,711	54,535	48,251	52,885	54,704
	6. Supporting activities	32,920	32,513	33,274	32,774	32,620	33,375
	Total direct program costs, funded	646,585	640,373	648,200	643,717	642,500	650,200
	Reimbursable program:						
	1. Manned space flight	559	1,281	1,368	620	1,291	1,368
	3. Space applications	748	640	594	630	782	594
	4. Space technology	730	895	895	707	929	895
	Total reimbursable program costs	2,037	2,816	2,857	1,957	3,002	2,857
	Total program costs, funded	648,621	643,189	651,057	645,674	645,502	653,057
	Change in selected resources [1]				2,947	−2,313	−2,000
	Total	648,621	643,189	651,057	648,621	643,189	651,057
	Financing:						
	Receipts and reimbursements from:						
11	Federal funds				−1,808	−2,541	−2,578
14	Non-Federal sources [2]				−229	−275	−279
25	Unobligated balance lapsing				898		
	New obligational authority				647,483	640,373	648,200
	New obligational authority:						
40	Appropriation				640,000	628,000	648,200
41	Transferred to other accounts				−417	−127	
42	Transferred from other accounts				7,900	12,500	
43	Appropriation (adjusted)				647,483	640,373	648,200
	Relation of obligations to expenditures:						
10	Total obligations				648,621	643,189	651,057
70	Receipts and other offsets (items 11 to 17)				−2,037	−2,816	−2,857
71	Obligations affecting expenditures				646,585	640,373	648,200
72	Obligated balance, start of year				106,465	101,291	101,164
74	Obligated balance, end of year				−101,291	−101,164	−101,164
77	Adjustments in expired accounts				−1,906		
90	Expenditures				649,852	640,500	648,200
	Expenditures are distributed as follows:						
01	Out of current authorizations				570,498	539,209	547,036
02	Out of prior authorizations				79,354	101,291	101,164

[1] Selected resources as of June 30 are as follows:

	1966	1967 adjustments	1967	1968	1969
Unpaid undelivered orders	53,285	−2,031	54,265	51,951	49,951
Advances	220		157	157	157
Total selected resources	53,505	−2,031	54,421	52,108	50,108

[2] Reimbursements from non-Federal sources are receipts for services performed on Communications Satellite Corp. projects (42 U.S.C. 2473) and for personal property sold for replacement purposes (40 U.S.C. 481).

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimate	1969 estimate
	Direct obligations:			
	Personnel compensation:			
11.1	Permanent positions	361,883	383,335	390,349
11.3	Positions other than permanent	5,959	5,514	5,723
11.5	Other personnel compensation	9,265	7,191	6,770
11.7	Military personnel	3,791	4,098	4,200
11.8	Special personal service payments	250	281	286
	Total personnel compensation	381,148	400,419	407,328
12.0	Personnel benefits	28,744	30,777	31,247
13.0	Benefits for former personnel	49	1,137	100
21.0	Travel and transportation of persons	19,517	18,120	18,169
22.0	Transportation of things	4,819	4,683	4,545
23.0	Rent, communications, and utilities	47,701	51,637	53,457
24.0	Printing and reproduction	6,458	6,036	6,031
25.1	Other services	107,010	94,481	95,528
25.2	Services of other agencies	11,330	9,514	9,494
26.0	Supplies and materials	20,719	17,004	16,244
31.0	Equipment	13,219	4,842	4,544
32.0	Lands and structures	5,805	1,662	1,458
41.0	Grants, subsidies, and contributions	12	22	22
42.0	Insurance claims and indemnities	54	39	33
	Total direct obligations	646,585	640,373	648,200
	Reimbursable obligations:			
11.1	Personnel compensation: Permanent positions	520	532	523
12.0	Personnel benefits	29	37	33
21.0	Travel and transportation of persons	54	43	38
23.0	Rent, communications, and utilities	631	821	821
25.1	Other services	399	787	866
26.0	Supplies and materials	280	443	443
31.0	Equipment	124	133	133
32.0	Lands and structures		20	
	Total reimbursable obligations	2,037	2,816	2,857
99.0	Total obligations	648,621	643,189	651,057

PERSONNEL SUMMARY

Total number of permanent positions	33,726	32,422	32,727
Full-time equivalent of other positions	1,114	973	994
Average number of all employees	34,384	33,954	33,412
Average GS grade	10.5	10.6	10.6
Average GS salary	$11,441	$12,296	$12,472
Average salary, grades established by the Administrator, NASA	$7,740	$8,178	$8,568
Average salary of ungraded positions	$23,697	$24,657	$24,657

Construction of Facilities

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	Budget plan (amounts for construction of facilities actions programed)			Costs and obligations		
	1967 actual	1968 estimate	1969 estimate	1967 actual	1968 estimate	1969 estimate
Program by activities:						
Direct program:						
1. Manned space flight	45,057	25,665	18,659	139,227	57,300	26,500
2. Scientific investigations in space	4,688	3,595	1,200	12,771	9,500	4,500
3. Space applications				8		
4. Space technology	8,590	2,115	386	24,309	26,800	9,700
5. Aircraft technology	21,010	3,170		1,530	13,600	4,300
6. Supporting activities	7,066	3,255	24,755	71,279	18,800	14,300
Total direct program costs, funded	86,411	37,800	45,000	249,124	126,000	59,300
Reimbursable program:						
3. Space applications				618	211	
Total program costs, funded	86,411	37,800	45,000	249,742	126,211	59,300
Change in selected resources [1]				−133,745	−31,111	−14,300
10 Total	86,411	37,800	45,000	115,997	95,100	45,000
Financing:						
11 Receipts and reimbursements from: Federal funds				718		
21 Unobligated balance available, start of year, for completion of prior year budget plans				−128,103	−95,386	−38,686
22 Unobligated balance transferred from other accounts					−600	
23 Unobligated balance transferred to other accounts				1,002		
Reprograming from prior year budget plans	−1,411					
24 Unobligated balance available, end of year, for completion of prior year budget plans				95,386	38,686	38,686
New obligational authority	85,000	37,800	45,000	85,000	37,800	45,000
New obligational authority:						
40 Appropriation	83,000	35,900	45,000	83,000	35,900	45,000
42 Transferred from other accounts	2,000	1,900		2,000	1,900	
43 Appropriation (adjusted)	85,000	37,800	45,000	85,000	37,800	45,000
Relation of obligations to expenditures:						
10 Total obligations				115,997	95,100	45,000
70 Receipts and other offsets (items 11–17)				718		
71 Obligations affecting expenditures				116,715	95,100	45,000
72 Obligated balance, start of year				316,977	145,043	80,143
74 Obligated balance, end of year				−145,043	−80,143	−49,643
90 Expenditures				288,648	160,000	75,500
Expenditures are distributed as follows:						
01 Out of current authorizations				16,070	15,000	4,500
02 Out of prior authorizations				272,578	145,000	71,000

[1] Selected resources as of June 30 are as follows:

	1966	1967	1968	1969
Unpaid undelivered orders	215,702	82,061	50,950	36,650
Advances	105	1	1	1
Total selected resources	215,807	82,062	50,951	36,651

Note.—Reconciliation of budget plan to obligations:

	1967 actual	1968 estimate	1969 estimate
Total budget plan	86,411	37,800	45,000
Deduct portion of budget plan to be obligated in subsequent years	36,370	11,800	19,400
Add obligations of prior year budget plans	65,956	69,100	19,400
Total obligations	115,997	95,100	45,000

OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

		1967 actual	1968 estimated	1969 estimated
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION			
	Direct obligations:			
31.0	Equipment	7,237	6,700	11,500
32.0	Lands and structures	108,546	88,156	33,500
	Total direct obligations	115,783	94,856	45,000
	Reimbursable obligations:			
31.0	Equipment	69	55	----------
32.0	Lands and structures	55	45	----------
	Total reimbursable obligations	124	100	----------
	Total obligations, National Aeronautics and Space Administration	115,907	94,956	45,000
	ALLOCATION TO ATOMIC ENERGY COMMISSION			
32.0	Lands and structures	90	144	----------
99.0	Total obligations	115,997	95,100	45,000

Mr. EVINS. The committee will come to order.

We will resume our appropriations hearings with the officials of the National Aeronautics and Space Administration.

We will take up this morning the administrative operations and construction for the different installations.

JOHN F. KENNEDY CENTER

We will consider the John F. Kennedy Center. Kennedy is a launch-operation facility. It is a primary test center for the launch of space vehicles, both manned and unmanned.

This center has participated in the Project Mercury, Gemini, and the Saturn vehicle development flights. They are now concentrating on the Apollo program; unmanned and manned launches are projected.

The justifications state that this center is specifically responsible for the following: Launch vehicle checkout and preparation; spacecraft payload checkout and preparation; launch facility design, construction, maintenance, and operations.

You don't do this construction there, do you, Mr. Webb?

The construction is done by contract.

Mr. WEBB. Yes, sir; that is right. We do not do any of our own construction.

THE 1968 LAUNCHINGS AT KENNEDY

Mr. EVINS. Tell us what your plans are for this center by way of launching in this calendar year.

Mr. WEBB. Are you speaking of the Western Test Range?

Mr. EVINS. I am speaking of the Kennedy Center.

Mr. WEBB. I think I will call on Dr. Mueller for this, with your permission.

Mr. EVINS. You told us yesterday one of the Saturn V's is scheduled soon.

Dr. MUELLER. Saturn V is scheduled in about 2 weeks, on March 27 or 28.

The next flight then that is presently scheduled——

Mr. JONAS. Before you leave that, what is its objective?

Dr. MUELLER. It follows the first Saturn V.

Mr. EVINS. It is a test of the system.

Dr. MUELLER. Yes, sir.

Mr. EVINS. How long do you intend to keep it?

SATURN V MISSION OBJECTIVES

Dr. MUELLER. About 9 hours. Actually, in this case, for the first time, we are actually flying a trajectory which tests the service module that is associated with the command module. If that works, we will go on past where the moon would be and come back. Other than that, the flight has the same general set of objectives that we had on the first mission.

The next flight presently scheduled is the unmanned flight of the Lunar Module, and that is now being reviewed and we expect to make a decision either this afternoon or tomorrow morning as to whether we will go forward with this unmanned Lunar Module flight or not.

Then following that will be a decision on the 503 flight, which is the third flight of an unmanned Saturn V, as to whether or not that is required to man-rate the Saturn V; then the first manned flight on the Saturn I and the first manned flight on the Saturn V are the last two flights this year.

Mr. EVINS. How many flights do you currently have scheduled for 1968?

Dr. MUELLER. Three unmanned and two manned flights in addition for 1968.

CAPITAL INVESTMENT AT KENNEDY CENTER

Mr. EVINS. That is going to be a very active base.

You call this the most highly flexible space port. This is located 50 miles from Orlando. The State of Florida has dedicated to the United States exclusive rights of use to 53,563 additional acres.

You have a total capital investment, including work in progress and contractor-held facilities, of $948,606,000, almost $1 billion invested in this one facility.

Gentlemen, we will place in the record AO 2–1 through 2–3.

(The pages follow:)

JOHN F. KENNEDY SPACE CENTER, NASA

MISSION

The Kennedy Space Center was established at Cape Kennedy, Fla., as a separate Center within NASA in July 1962. Prior to that time, it had been the Launch Operations directorate of the Marshall Space Flight Center. It serves as the primary Center within NASA for the test, checkout, and launch of space

vehicles. This presently includes launch of manned and unmanned vehicles at Kennedy Space Center, Fla., and unmanned vehicles at the Western Test Range. Kennedy Space Center has participated in the flight preparations for projects Mercury and Gemini; and Saturn vehicle development flights. The Center is now concentrating on the Apollo program unmanned and manned launches, as well as scientific unmanned launches. Kennedy Space Center is specifically responsible for:

1. Launch vehicle checkout and preparation.
2. Spacecraft and payload checkout and preparation.
3. Launch facility design, construction, maintenance, and operations.
4. Final integration and integrated checkout of vehicle, spacecraft and launch facilities, and the conduct of actual launch operations.
5. Operation and coordination of supporting facilities, ground support equipment, and tracking and data acquisition and logistics support required for operatiton of all NASA activities at the Eastern and Western Test Ranges.

In fulfilling its assigned programs, the Kennedy Space Center has developed into a highly flexible space port capable of handling a wide variety of launch activities for present and future manned and unmanned space missions.

DESCRIPTION

The Kennedy Space Center is situated approximately 50 miles east of Orlando, Fla., in northeast Brevard County.

The total land area occupied by the installation is approximately 87,800 acres, including 84,303 acres owned by NASA. In addition to the land area occupied, the State of Florida has dedicated to the United States exclusive use rights to some 53,563 acres of State-owned submerged lands.

In addition to the operation and maintenance of all facilities at the Kennedy Space Center, the Center is responsible for certain facilities within the national Eastern Test Range launch area. The total capital investment of Kennedy Space Center including work in progress, contractor-held facilities at various locations, and the Western Test Range, as of June 30, 1967, is $948,606,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$33,108,000	$37,683,000	$39,979,000
Travel	867,000	819,000	819,000
Automatic data processing	1,302,000	1,200,000	1,320,000
Facilities services	47,801,000	43,403,000	45,305,000
Technical services			
Administrative support	9,664,000	10,726,000	10,287,000
Total, fund requirements	92,742,000	93,831,000	97,710,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Gemini			
Apollo	1,497	1,708	1,735
Apollo applications	21	48	48
Space science and applications:			
Launch vehicle procurement	145	145	145
Subtotal, positions by program	1,663	1,901	1,928
2. Support positions:			
Director and staff	61	61	61
Administrative support	602	575	548
Research and development support	394	394	394
Subtotal, support positions	1,057	1,030	1,003
Total, permanent positions	2,720	2,931	2,931

UNMANNED SCIENTIFIC LAUNCHES

Mr. EVINS. This tells the story about the investment, and the personnel.

Mr. WEBB. Mr. Chairman, we also launch from Cape Kennedy the scientific satellites and missions such as the Surveyor and the Mariner and Ranger.

Dr. Naugle could give you a statement on the other launches over and above the manned launches, if you wish.

Mr. EVINS. It is a space port capable of any kind of launching?

Mr. WEBB. Yes, sir.

Mr. EVINS. Your main concentration at Kennedy currently is on Saturn V. Are you presently operational with respect to small launchings?

Mr. WEBB. Yes, sir. We have a number of launches this year in the smaller category.

Mr. EVINS. What do you launch from Wallops?

Mr. WEBB. The Scout is the largest vehicle we launch from there, but we launch the Centaur from the Cape. That is a very powerful rocket.

LAUNCHES IN 1968

Mr. JONAS. How many launches do you plan to have?

Dr. NAUGLE. We have about 18 NASA missions of the Agena and Centaur class. Two of those are shelved so we have about 16 NASA missions from the Cape and then there are an additional nine missions for other agencies as part of the national program. There are a total of about 27 launches scheduled.

Mr. WEBB. One every 2 weeks.

Mr. EVINS. The State of Florida has given you 53,563 acres of land for exclusive use. In many cases, the State deeds it to the Government. Have they deeded this land to you?

Mr. WEBB. These are all submerged lands, Mr. Chairman, where we wish to keep out people with any activity because of the danger of these launchings of very large rockets. The endeavor is to retain these as submerged lands.

Mr. EVINS. It is very fine that they let you have it, but why didn't they give you a deed to it?

Mr. WEBB. I don't know the answer to that.

Mr. EVINS. You ought to look into it because other States, when you put in a facility, frequently deed the land to the Government.

Mr. WEBB. We will look into that, Mr. Chairman.

CONTRACTOR-OWNED FACILITIES

Mr. EVINS. How much is invested in contractor-owned facilities?

Dr. MUELLER. We don't keep an accurate record. This is an estimate of the contractor-owned facilities. There are something on the order of $75 million of contractor-owned and built facilities in the vicinity of the Cape.

Mr. EVINS. You ought to identify specifically the contractor-owned facility.

Dr. MUELLER. We will be glad to.

Mr. WEBB. Mr. Lilly will put a statement in the record or give you some information if you will give him one moment.

Mr. LILLY. Where it says contractor-held facilities, those are in various locations. This refers to the Government-owned equipment held by contractors.

Mr. EVINS. Are these facilities built off the base or on the base?

Mr. LILLY. These are off-base facilities owned by the contractors, where we own equipment in them.

SUPPORT CONTRACTORS

Mr. WEBB. Yes, sir. Kennedy is a Government center. It takes the vehicles, checks them out, and gets them ready for launch and launches them.

Mr. EVINS. How many support contractors do you have at the Kennedy Center?

Mr. LILLY. There are about five major support contractors.

Mr. EVINS. Will you supply the names for the record?

Mr. LILLY. All of these are for 1 year, with renewable options on them. The major contractors are:

Five major support contractors:

Catalytic-Dow.
Bendix Corp.
Federal Electric Corp.
Trans World Airlines.
Ling-Temco-Vought.

Mr. EVINS. They are 1-year contracts renewable at the end of each year?

Mr. LILLY. Yes, sir.

Mr. EVINS. How much is the amount involved for all your contracts, in round figures?

Mr. WEBB. At Cape Kennedy, about $35 million for the base support contracts.

Mr. EVINS. Has this gone up?

Mr. WEBB. It is going up because our launch rate is increasing. You see, we just brought the large $500 million launch complex 39 on stream with the last launch. The next one will check this out.

Mr. EVINS. Are these support contracts competitive?

Mr. WEBB. Originally, there were a large number of contractors. We consolidated them into this pattern of five. We let the contracts, I believe, for 3 years, but with options for extensions and review at the end of each year.

Now, we did decide to compete these contracts last summer. We advertised for bids to achieve competition. The bids were received, but were not opened because in the meantime the Civil Service Commission and the General Accounting Office had raised the question of the relationship of this kind of contract support to civil service. So we extended the existing contracts for 1 year to give us the chance to examine with the Civil Service Commission, the Bureau of the Budget, and the General Accounting Office the question of how to get this work done.

We have an interagency task force that has been there once and is now at work examining the problem.

The delay was caused by the actions I mentioned yesterday, in which——

SOURCE EVALUATION BOARD

Mr. EVINS. Who is the Government's representative in negotiating these contracts?

Mr. WEBB. What we use is a Source Evaluation Board that reports to the three senior officers. They reported to Dr. Dryden, Dr. Seamans, and myself, at the time the original contracts were to be let.

Once we have selected the contractor as a result of a Source Evaluation Board proceeding, the contracting officer negotiates the contract. Frequently, we will go to competitive negotiations where two or more contractors have to lay down an initial but complete contract which all parties are prepared to sign.

There is a careful job of selection and negotiation here.

Mr. EVINS. Very well. That is what the committee hopes for.

INVESTMENT IN CONTRACTOR FACILITIES

Mr. LILLY. Mr. Chairman, you asked for the amount on the contractor-held facilities. The capital investment is $39,961,000.

Mr. WEBB. That means, Mr. Chairman, that most of that capital investment is within the Government-owned area. In order to help prepare the material before it arrives at the area, or in association with the work managed by Cape Kennedy, we have about $39 million of Government-owned equipment out in contractors' facilities.

Mr. EVINS. Travel costs remain the same at Kennedy. Data processing goes up from $1,200,000 to $1,320,000. Personnel costs go from $33 million in 1967 to $39.9 million.

You propose more personnel. These are the two items that increase.

CONSTRUCTION COSTS

Now, looking at your justification volume III, you have some construction proposed at Kennedy next year. What are these? This is a total for 1969 of $13,909,000.

Mr. WEBB. Again I would like to turn to Dr. George Mueller.

Dr. MUELLER. At Cape Kennedy we have really only the modification and the refurbishment of the facilities there. There is no new construction involved here. There is some amount for the settlement of court claims from prior year land acquisition activities of about $3,560,000. This is the cost for modification and rehabilitation of portions of the complex.

LAUNCH COMPLEXES 34, 37, 39

Mr. EVINS. $1,800,000 for completion of launch complexes 34 and 37. Is that correct?

Dr. MUELLER. That is correct.

Mr. EVINS. Launch complex 39, completion cost is $5,328,000.

Dr. MUELLER. Yes, sir.

Mr. EVINS. A breakdown of this is shown on CF 2-2, volume III. We will put this in the record.
(The page follows:)

[Dollars in thousands]

Project line item	Cognizant office	Fiscal year 1959 through current year	Fiscal year 1969 (estimated)	Future years (estimated)	Total all years (estimated)
Launch complexes 34 and 37	MSF	106,846	1,800		108,646
Launch complex 39	MSF	488,679	5,328		494,007
Utility installations	MSF	65,125	2,521		67,646
Land acquisition	MSF	73,413	3,560		76,973
Alteration to launch complex 17	SSA	6,999	700	500	8,199
All other projects		163,787			
Total		904,849	13,909		

Launch Complexes 34 and 37
Funding

	Amount
Fiscal year 1968 and prior years	$106,845,898
Fiscal year 1969 estimate	1,800,000
Total funding through fiscal year 1969	108,645,898

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction:				
Service structure modifications	Lump sum		$1,320,000	$1,320,000
Umbilical tower modifications	do		480,000	480,000
Equipment				
Design				
Fallout shelter (not feasible)				None
Total				1,800,000

Project Purpose

This project will provide for the modification and rehabilitation of Launch Complexes 34 and 37 which are required to support continuing launches of the Saturn IB vehicles.

Project Description

This project will provide for modification and rehabilitation of Launch Complexes 34 and 37 to support continuing launch programs. The operational features of each complex will be modified and the complexes adapted to meet new mission requirements. Modifications to the service structures and umbilical towers for the Apollo Applications Program (AAP) include structural changes such as enlargement of service structure platform openings, changes to and relocation of swing arms, changes in the instrumentation, electrical power, communication, water, pneumatic and mechanical systems. These changes are in the nature of a relocation or modification of structures and systems to assure a compatible interface with new flight hardware and current support equipment.

Project Justification

Launch Complexes 34 and 37 are currently configured to support existing flight hardware and ground support equipment with respect to structural, electrical, propellant, environmental, piping, instrumentation and communications systems. With the advent of the larger and more complex spacecraft combinations such as the orbital workshop, airlock, and multiple-docking adapter, the proposed modifications are necessary to provide Kennedy Space Center with a capability to assemble, test, checkout and launch the AAP configured vehicles.

In order to have the complexes available for the AAP launches the modifications must be accomplished during fiscal year 1969 when the schedule provides sufficient time between launches to accomplish the work.

Estimated Future Year Funding for This Project

This requirement will be dependent upon the extent of follow-on and future programs. An estimated yearly expenditure of between $1 and $2 million will be required to safeguard the current investment.

LANDOWNER CLAIMS

Mr. EVINS. Utility installations, $2.5 million. Land acquisition here, $3,560,000? Why is there more land acquisition?

Dr. MUELLER. This is for paying the claims that remained after the land was acquired. Certain of the landowners went into court because they felt that the valuation of the land was not sufficiently high.

Mr. EVINS. Did this amount result from a Court of Claims decision?

Mr. WEBB. No, sir, not the Court of Claims, but the Federal district court.

These are cases where the landowner has gone to court to claim a higher amount than he was offered in condemnation proceedings; so these are for payments for court judgments in favor of landowners that are higher than we originally expected to pay for the land.

COMPLETION OF COMPLEX 39

Mr. MARSH. How much of that is replacement, Mr. Webb, for the existing facility?

Mr. WEBB. The largest amount is $5,328,000 to modify and rehabilitate launch complex 39.

The other amount, $3.5 million, is to pay for these court judgments resulting from the condemnation process.

In launch complexes 34 and 37, we are moving toward the flight of the early Saturn-Apollo systems on the Saturn IB, before we move to the big Saturn, so that $1.8 million is for modification of those two facilities that fly the Saturn IB.

Mr. LILLY. I might add one thing. For these facilities, the effort will be in terms of rehabilitation and necessary repairs to the structures involving about $1 to $2 million a year on complexes 34 and 37 and on complex 39 close to $5 to $7 million a year.

Mr. MARSH. When you launch, does it cause some damage to a portion of the facility?

Mr. LILLY. Yes, it does some damage to the facilities. On Complexes 34 and 37 it has been running anywhere from $100,000 to $200,000 a launch. We have only had one launch on complex 39 and that cost was a little over $1 million.

DEED FOR SURROUNDING LAND

Mr. EVINS. Mr. Webb, I want you to take up with the distinguished Governor of Florida the matter of deeding this land surrounding the base. The Federal Government has a billion dollars, approximately, invested there.

Mr. WEBB. We will, Mr. Chairman.

COMMUNICATIONS SYSTEMS

Mr. EVINS. Now, you have an item here of $1,121,000 for extension of communications systems. Tell us about this.

You say:

Experience has shown that the communications network can support current requirements, but the network does not possess the capacity to handle the increased load.

Dr. MUELLER. This is the modifications to the basic communnications system down at the Cape, which are required to support the conclusions of the AS–204 Fire Board which said we needed to improve the basic communications facilities down there. These provide, then, for the change from two-wire to four-wire in certain of the facilities to improve the capability of operating in a continuing fashion during the countdown.

Mr. EVINS. How many launches have you had from this complex?

Mr. WEBB. There has been only one launch from this Complex 39. We had trouble at 34 and 37 at the time of the fire. Now at Complex 39 you have an ability to keep the rocket as constructed in the larger Vehicle Assembly Building connected with the control center in digital form.

Now it has moved 3.5 miles down to the launch pad without in effect breaking this connection.

As we bring that system into being, the relation of it to the total communications setup at the Cape, including the improvements that have to be made as a result of the fire, brings these incremental items into play.

We have only had one test from Launch Complex 39.

Mr. EVINS. You are connecting improved communications with this new launch pad?

Mr. WEBB. Yes.

Mr. JONAS. If we have only had one launch, which is the case, at Complex 39, why do we have to spend all this money modifying it?

Dr. MUELLER. This is the rehabilitation of the facilities.

Mr. JONAS. You call it rehabilitation.

FIVE TO SIX LAUNCHES IN 1969

Dr. MUELLER. That is true, we are requesting funds for next year's operation. This is fiscal 1969 operation and next year we expect to launch five or six vehicles.

Mr. JONAS. Why do you have to refurbish it when you haven't got it hardly in operation?

Dr. MUELLER. Every time you fire one of these vehicles, the flame impingement down below burns off parts of the tower and so on.

Mr. JONAS. Do you have to do that at every launch complex when there is a launch?

Dr. MUELLER. Yes, sir.

Mr. JONAS. This is the biggest item I have seen.

Mr. WEBB. This is the biggest bird that we fly. It has a tremendous amount of fire.

Mr. JONAS. But you say you include not only refurbishment, but the replacement of worn, deteriorated or corroded mechanical and electrical components?

REPAINTING REQUIREMENT

Dr. MUELLER. Exactly, but, Mr. Jonas, this complex now represents some $500 million in investment, and just repainting it costs a good deal of money.

Mr. JONAS. Do you have to repaint it every time there is a launch?

Dr. MUELLER. No, sir; but we do repaint parts of it every time there is a launch, and in a normal cycle we will repaint every 4 years.

Mr. JONAS. This will be a recurring cost as long as the complex is used?

Dr. MUELLER. And the recurring cost for that complex will run somewhere between five and seven million dollars a year, just to keep it up.

You do have to paint, even around Washington, about every 2 years or 3 years.

Mr. TALCOTT. That is a small part of the rehabilitation, isn't it?

Dr. MUELLER. Yes, that is only one aspect of it. Then the environment at the Cape is a hostile environment in terms of metal parts and so on, and there is a reasonable amount of corrosion.

Mr. WEBB. There is one other point, Mr. Chairman. There is a large amount of very advanced mechanical and electronic equipment here; cryogenic storage tanks, all kinds of ability to load fuel rapidly. The pumps that load the first stage of the Saturn V pump 10,000 gallons a minute into that bird. When you have this kind of equipment, you just have to maintain it.

Dr. MUELLER. Each one of these birds is worth $150 million at the rate we are buying them.

CONSTRUCTION OF FACILITIES, JOHN F. KENNEDY SPACE CENTER

Mr. EVINS. We will place in the record pages 11 through 13 and 16 through 20.

(The pages follow:)

FISCAL YEAR 1969 ESTIMATES

Utility Installations

Authorization line item: John F. Kennedy Space Center, NASA.
Program office for the project: Office of Manned Space Flight.
Location of project: Merritt Island, Brevard County, Fla.
Cognizant NASA installation: John F. Kennedy Space Center, NASA.
Type of construction project: Rehabilitation, alteration and extension.

Funding:

Fiscal year 1968 and prior years	$65,125,058
Fiscal year 1969 estimate	2,521,000
Total funding through fiscal year 1969	67,646,058

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction:				
Banana River barge channel:				
Dredging	Cubic yard	(1,740,000)	(1)	$890,000
Dolphins	Each	(5)	($4,000)	(870,000)
High temperature hot water system	Lump sum		510,000	(20,000)
Equipment: Extension to communication systems	do		1,121,000	510,000
Design				1,121,000
Fallout shelter (not feasible)				None
Total				2,521,000

[1] 50 cents.

PROJECT PURPOSE

To provide for improvements to the Banana River barge channel, rehabilitation of the high temperature hot water distribution system, and extensions to the communication systems.

PROJECT DESCRIPTION

This project provides for the following modification and/or rehabilitations:

Improvements to Banana River barge channel.—Dredging the 15 mile long Banana River barge channel from a point west of the Port Canaveral locks to the Saturn IB dock and the Vehicle Assembly Building (VAB) turning basin, from the present design depth of 10 feet to a new depth of 12 feet. In addition, a 12 foot deep mooring area will be dredged adjacent to the channel near the Port Canaveral locks, and 5 mooring dolphins will be installed.

Rehabilitation of high-temperature hot water system.—Replacement of approximately 12,000 linear feet of supply and return piping in portions of the existing high temperature hot water distribution system which serves facilities in the Merritt Island industrial area. Also included are modifications to manholes and the installation of additional valves and bypass lines.

Extension to the communication system.—Installation of additional communication and instrumentation circuits to support program requirements in the fiscal year 1969 time frame. These additions will include audio circuits, video circuits, and wideband transmission and receiving terminal units between the central telephone office, launch complex 39 and the industrial area.

PROJECT JUSTIFICATION

Improvement to Banana River barge channel.—The design depth of the Banana River channel is currently only 10 feet. This depth is inadequate for safe navigation since normal silting action has caused the barges, carrying multimillion dollar launch vehicle stages, to scrape bottom with resulting physical damage. By dredging the channel to a depth of 12 feet, these problems will be eliminated. The depth of 10 feet corresponded to the original depth of the connecting intracoastal waterway system. However, similar problems with the intracoastal waterway resulted in dredging of this waterway to 12 feet in order to assure safe navigation. Therefore, the 12 foot depth of the Banana River barge channel will be compatible with the connecting waterway.

The mooring area is required to assure the availability of safe barge mooring facilities in the Port Canaveral area at all times. The barge channel is not always navigable since it is not marked for night operations and there are times when the weather will not permit safe passage. It is, therefore, necessary to provide a NASA owned mooring capability in the lock area since it is not possible to schedule the arrival of barges to coincide with the availability of existing harbor facilities at Port Canaveral. This will preclude the necessity of anchoring at sea with the attendant risks of such action.

Rehabilitation of high-temperature hot water system.—The existing high temperature hot water system was installed in 1963 to provide heat and critical humidity control to facilities in the Merritt Island Industrial Area. During the past year a number of leaks have been encountered indicating a corrosive condition in the underground portions of the system which results in a breakdown of the pipe and its protective external casing. While normal repair can handle the present breakdowns, the increasing number of leaks dictates the initiation of a replacement program for parts of the system during the fiscal year 1969 period. Installation of valves and bypass lines will provide greater flexibility in the system. Manholes will require modification to adapt to the improved piping system.

Extension to communication systems.—Additional audio and wideband circuits and terminals are required to meet the increased requirements for real-time data which will be generated by the continuing launch programs during the fiscal year 1969 time period. These requirements are based on the need to support near-simultaneous major tests for a Saturn IB on the launch pad, a Saturn V in the VAB and an additional Saturn V at the launch pad. Based on current schedules launch vehicle activity in this time frame exceeds the current capacity of communication systems. Experience has shown that the existing communication network can support current requirements but the network does not possess the capacity to handle the increased load which will be generated by concurrent

operations. Additional wideband circuitry must be provided between the central telephone office and the VAB, Repeater Building, central instrumentation facility and other industrial area facilities to satisfy the above requirements. Additional audio capability is also required at pads A and B.

Land Acquisition

Authorization line item: John F. Kennedy Space Center, NASA.
Estimating office for the project: Office of Manned Space Flight.
Location of project: Merritt Island, Brevard County, Fla.
Cognizant NASA installation: John F. Kennedy Space Center, NASA.
Type of construction project: Not applicable.
Funding:

Fiscal year 1968 and prior years	$73,413,000
Fiscal year 1969 estimate	3,560,000
Total funding through fiscal year 1969	76,973,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition	Lump sum		$3,560,000	$3,560,000
Construction				
Equipment				
Design				
Fallout shelter (not feasible)				None
Total				3,560,000

PROJECT PURPOSE

To provide funds required for the completion of land acquisition at the Kennedy Space Center.

PROJECT DESCRIPTION

An additional $3,560,000 will be required for the payment of judgments resulting from condemnation proceedings associated with land acquisition at the Kennedy Space Center.

PROJECT JUSTIFICATION

The acquisition of land, now totaling 87,763 acres, at the Kennedy Space Center was authorized through the fiscal year 1962 and 1963 construction of facilities programs. During the acquisition process it was indicated that a total of $73,413,000 would be adequate for real estate acquisition, including contingencies. Since then judgments rendered by the courts in condemnation cases have been far in excess of amounts originally deemed reasonable by the Government and placed on deposit with the courts. Sufficient funds are on hand to provide for the payment of all judgments which are scheduled to occur through fiscal year 1968. It is expected, however, that 25 tracts totaling 4,029 acres will remain to be settled during fiscal year 1969 and succeeding years. A total of $4,201,400 has been placed on deposit with the courts for these tracts as the amount considered reasonable and equitable by the Government appraisers, but based upon experience with cases adjudicated to date, an additional $3,560,000 will be required for settlement.

Estimated future year funding for this project.—None.

Alterations to Launch Complex 17

Authorization line item: John F. Kennedy Space Center, NASA.
Program office for the project: Office of Space Science and Applications.
Location of project: Merritt Island, Brevard County, Fla.
Cognizant NASA installation: John F. Kennedy Space Center, NASA
Type of construction project: Modification and Renovation
Funding:

Fiscal year 1968 and prior years	$6,998,527
Fiscal 1969 estimate	700,000
Total funding through fiscal year 1969	7,698,527

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction:				
6,000-p.s.i. helium tank	Cubic foot	300	$180	$54,000
6,000-p.s.i. nitrogen tank	do	300	180	54,000
High pressure piping	Linear foot	600	80	48,000
Pressure regulator, relief and shutoff valves and manifolds	Lump sum		88,000	88,000
Tank supports and fragmentation revetments	do		54,000	54,000
Equipment:				
1st stage pressurization control and monitor console	do		214,000	214,000
2d stage pressurization control and monitor console modification and calibration	do		43,000	43,000
Refurbish and rewire relay rack and junction boxes	do		85,000	85,000
Special interconnecting cable assemblies	do		60,000	60,000
Design				
Fallout shelter (not feasible)				None
Total				700,000

PROJECT PURPOSE

This project is to provide improved safety and launch complex systems reliability in support of the multistage Delta launch vehicle.

PROJECT DESCRIPTION

Launch complexes 17–A and 17–B comprise the entire east coast capability for multistage Delta vehicle launches. This project provides for the following rehabilitation and renovation to launch complex 17–B and the blockhouse control consoles:

High-pressure helium and nitrogen gas system.—Includes disassembly relocation, reassembly and replacement of various components of the existing high pressure gas system. The new location will be approximately 800 feet east of the present location, between launch pads A and B and adjacent to the existing low pressure nitrogen system. New valves, manifolds, and controls will be replaced as needed to meet safety standards. The high (6,000 pounds per square inch) pressure vessels will be installed on a new 35 foot by 75 foot concrete pad, protected by fragmentation revetments.

Composite pneumatic control and distribution system.—A new first stage pressurization control and monitor console will be provided for the launch complex 17–B side of the blockhouse to be compatible with the pneumatic console at the launch pad which is used to remotely control and monitor the valves and pressure regulators controlling the loading of the propellants and pressurants. The second stage pressurization control console also located in the blockhouse will be modified by the replacement of meters, switches, and internal rewiring. Special blockhouse and service structure cable assemblies will be replaced.

PROJECT JUSTIFICATION

Relocation and improvement of high-pressure gas system.—The present high pressure gas system constitutes a safety hazard due to the antiquated components and the present location, which is adjacent to the complex operations building. The new location will be at sufficient distance from major work areas to reduce most personnel hazards in the event of a component or systems rupture.

Composite pneumatic distribution and control systems.—Changes in manufacturing technique and improved technology for valves, solenoids, and components combined with the nonavailability of replacement parts make selective correction to the existing distribution and control systems impractical. Complete replacement of the existing unreliable systems is the only alternative for correcting the current problems.

In the present blockhouse configuration, the first stage pressurization control console is separated from the monitoring console. Thus, two operators are required and real time control is delayed when anomalies occur during fueling and tank pressurization operations. The new console will combine these control and monitoring functions under a single operator.

Estimated future year funding for this project.—$500,000.

Manned Spacecraft Center

Mr. Evins. Now, we have the Manned Spacecraft Center. This facility is primarily for design, development, and manufacture of manned spacecraft, and for selection and training of astronaut crews.

You have completed two major programs. The Mercury program and the Gemini program. Now you are heavily engaged in the Apollo program and you list seven items, including the design, development, and fabrication of the Apollo spacecraft.

Your personnel costs go from $63,672,000 last year to $64,747,000 and your other items remain about the same. Your total appropriation for the Manned Spacecraft Center is $97,096,000.

Place pages AO 2-12, 2-13, and 2-14 in the record.

(The pages follow:)

Manned Spacecraft Center

MISSION

The Manned Spacecraft Center was established in November 1961 at Houston, Tex., as NASA's primary Center for the design, development, and manufacture of manned spacecraft, and for selection and training of astronaut crews and the conduct of space flight missions. Manned Spacecraft Center and its predecessor organization, the NASA Space Task Group, have completed two major programs: (1) the Mercury program, which was the United States pioneering venture into manned space flight; and (2) the Gemini program, which extended manned flight capability in space in many significant ways. Manned Spacecraft Center is now heavily engaged in the Apollo program and is also proceeding with necessary program planning and technical analysis of the Apollo Applications Program and other post-Apollo activities.

The Apollo program utilizes the capabilities of the Manned Spacecraft Center in several ways. This Center is responsible for—

(1) the design, development, and fabrication of the Apollo spacecraft, including the command and service modules, and the lunar module;

(2) overall program management and control of the spacecraft including module integration, testing, and qualification;

(3) conduct of a program of spacecraft environmental testing;

(4) selection and training of astronauts and preparation of primary and backup crews for each mission;

(5) operation of the Mission Control Center and control of the space flight missions from lift off to recovery;

(6) development of scientific experiments to be flown on Apollo flights; and

(7) operation of the Lunary Receiving Laboratory, which provides a central complex where samples of materials brought to earth by lunar exploration teams may be received, quarantined, processed, undergo limited experiments, and be distributed to the scientific community for further analysis.

The longer duration flights planned for the Apollo applications missions will make it necessary to use the experienced personnel of this Center to upgrade spacecraft and lunar module subsystems. This Center is also responsible for the development of earth sensor experiment modules and biomedical, bioscience, and behavioral experiment modules to be flown on Apollo applications missions.

DESCRIPTION

The Manned Spacecraft Center is located 2 miles east of the town of Webster, Tex. The site is approximately 20 miles southeast of downtown Houston and 25 miles northwest of Galveston, Tex. Total NASA-owned land consists of 1,620 acres. The Center also holds an additional 55,880 acres under use agreement at the White Sands test facility. The total capital investment of the Manned Spacecraft Center, including work in progress, contractor-held facilities at various locations, and the White Sands test facility, as of June 30, 1967, is $351,469,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$59,664,000	$63,672,000	$64,747,000
Travel	4,433,000	4,093,000	4,093,000
Automatic data processing	6,430,000	6,843,000	6,843,000
Facilities services	12,647,000	10,861,000	11,047,000
Technical services	1,256,000	834,000	834,000
Administrative support	11,229,000	9,605,000	9,532,000
Total, fund requirements	95,659,000	95,908,000	97,096,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Gemini	29		
Apollo	2,931	2,935	2,403
Apollo applications	221	286	798
Advanced missions	114	114	114
Space science and applications:			
Physics and astronomy		18	23
Lunar and planetary		12	16
Space applications	26	26	35
Advanced research and technology:			
Space vehicle systems	4	8	10
Electronics systems	4	4	4
Human factor systems	8	8	8
Space power and electric propulsion systems	3	3	3
Chemical propulsion	2	2	2
Technology utilization	5	5	5
Subtotal, positions by program	3,397	3,421	3,421
2. Support positions:			
Director and staff	93	93	93
Administrative support	1,019	856	856
Research and development support	195	209	209
Subtotal, support positions	1,307	1,158	1,158
Total, permanent positions	4,704	4,579	4,579

PLANT SUBSTANTIALLY COMPLETE

Mr. PRYOR. What is our position with regard to future location of sites and additional facilities?

Dr. MUELLER. I think out plant is substantially complete as to locations.

Now, at the reduced level of operations we will probably be retiring from some locations and consolidating them, but they will be smaller locations for testing; not these larger installations like the one at Cape Kennedy, Houston, or Huntsville.

There is a problem at New Orleans with respect to the very large Michoud facility there, which at the lowered rate of production and assembly of boosters will not be fully employed, and we have a problem as to whether we will close off part of that plant, use part of it for storage, or whether some other work now done elsewhere can be put here.

So at the presently planned operating level we do have a real problem of a very low launch rate. Where we had planned six launches a year, we will be forced down to two.

Mr. PRYOR. We have our sites pretty well intact at this time and we will not have this experience to go over each year.

INFORMATION AND PUBLIC AFFAIRS OFFICES

Mr. EVINS. Take a look at the chart on page AO 2–15, volume IV. You have an information division at Houston with 89 personnel, and then a public affairs office in Houston with 39 personnel. What do these offices do?

Mr. WEBB. Our Assistant Administrator, Mr. Julian Scheer, is here.

Mr. EVINS. Tell us if you can consolidate those two, Mr. Scheer.

Mr. SCHEER. There is no duplication, Mr. Chairman. The information Systems Division is a part of the Apollo management system.

Mr. EVINS. What kind of information do you get out of the Information Systems Division?

Mr. SCHEER. The Information Systems Division is a technical division having to do with systems using computers. It has nothing to do with PIO.

Mr. EVINS. Is it operational?

Mr. SCHEER. It is an operational computer division. It is designed to develop small computer systems.

Mr. EVINS. What kind of information do you get out of this division?

Mr. WEBB. If you have a special computer on the ground to simulate a flight or to operate within a spacecraft, you must have the software work, the information work that feeds this special computer for a very special purpose. And this computer, as I understand it, generates this kind of information.

Dr. MUELLER. This is the division that operates our off-line computer complex for the flights.

We have an on-line computer complex that gives the real time data and we have an off-line system to do process tasks while the main computer is tied up.

CONSTRUCTION AT HOUSTON

Mr. EVINS. For construction at Houston you are asking $3,100,000; for modifications to the environmental testing laboratory, $1.5 million, and addition to the flightcrew training facility, $1.6 million. What is envisioned for these two construction items?

Dr. MUELLER. In the case of the million and a half dollars for equipment, what we are doing is proceeding with modifications to improve the man-rated capability and operational efficiency of the chambers, by installing additional vacuum systems, emergency electrical power systems, and certain other instrumentation.

Mr. EVINS. Is this flightcrew training?

Dr. MUELLER. This is for the actual environmental testing of the spacecraft.

Mr. EVINS. What is the modification?

NATURE OF MODIFICATION

Dr. MUELLER. Just simply to improve the reliability of the equipment, to provide for continuing operation.

It becomes dangerous if this thing shuts down in the middle of a run, so we are trying to put in enough redundancy so that this won't happen.

Mr. EVINS. This is the laboratory itself?

Dr. MUELLER. That is right.

Mr. JONAS. Is this the final increment cost for construction of that laboratory?

Dr. MUELLER. It is for modifications and rehabilitations to the chambers. We expect that $1 to $2 million will be required on a yearly basis to retain the basic capability and incorporate technological advances.

Mr. JONAS. Is this laboratory in use?

Dr. MUELLER. Oh, yes; it has been in operation now for about 3 years.

LUNAR RECEIVING LABORATORY

Mr. JONAS. What laboratory are you going to use to test the materials that you bring back from the moon?

Dr. MUELLER. Not this one. This is for testing the thermal vacuum characteristics of the spacecraft.

Mr. WEBB. You put the men and the spacecraft inside and operate it to simulate a mission. Therefore we have to be very careful of safety there just as you would be in flight.

Mr. EVINS. What is the other one?

Dr. MUELLER. The lunar receiving laboratory is now nearing completion. The brick and mortar is done and they are about halfway through the checkout.

Mr. JONAS. It will be ready by the time we get back with the dirt?

Dr. MUELLER. We expect to be ready.

SURVEYOR RESULTS

Mr. JONAS. By the way, on this subject, what did you discover when you had that pick digging into the surface?

Mr. WEBB. Dr. Naugle will tell you about the Surveyor digging operation on the moon.

Dr. NAUGLE. We discovered that the surface of the moon was a very fine pulverized substance with a mixture of rock and other material in it. We discovered the surface was perfectly adequate for Apollo to land on, perfectly adequate for an astronaut to walk on. He would sink in a little bit, but not much. We measured the bearing strength and we measured the density of the material. We showed that the Maria area we examined are all similar to each other.

APOLLO LANDING SITES CERTIFIED

We showed that the material on the highlands, where we landed the last Surveyor, was different than the Maria area. We landed Surveyors in four of the potential Apollo landing sites, and we were able to certify that those sites are suitable for Apollo landings. By using that data plus the Orbiter photographs of the other four landing sites, we were able to certify a total of eight landing sites for Apollo, as well as get a good deal of scientific information about the lunar surface. That was just from this small shovel that we used there.

USE OF SURFACE SAMPLER

We also used that small surface sampler in a rather unique way on the last mission, Surveyor VII. We had an instrument on board to measure the composition of the surface. In order to do that the instrument had to be lowered down onto the surface. It hung up on deployment and wouldn't go down, so we used a combination of the TV and the surface sampler to work around this. We were able to apply pressure on it, to actually push the instrument down and put it on the surface so that we were able to make measurements of the composition of the surface.

Mr. EVINS. All these calculations and deductions were made from the photographs transmitted back?

Dr. NAUGLE. That is right. We essentially used the TV as eyes, and the surface as hands to reach out and send it down. we have prepared a time lapse movie of how this actually took place, which is very interesting to watch.

Mr. JONAS. How far down before you hit solid surface?

Dr. NAUGLE. This depended on the area where we made the measurements. On the Maria area, we never did hit solid surface. We went down about 5 or 6 inches.

In the last mission where we landed in the Maria area, in one trench that we dug we did hit a rock and you could actually see where the surface sampler sort of scooted out around it. In another case, we hit a rock and the surface sampler pulled on it and actually moved the Surveyor a little bit. I rather think what we did was simply hit a large rock which was buried 4 or 5 inches under this debris.

Mr. JONAS. What do you figure this material on the surface is?

SURFACE MATERIAL BASALTIC

Dr. NAUGLE. The composition that we measured in the Maria area with this instrument shows that it is similar to what is called basalt by geologists. This is a material that is similar to ordinary terrestrial basalts which tends to come out of volcanoes on the earth.

The northwest part of this country, in the mountains around the Columbia River tend to be, by and large, made out of this basalt.

Mr. JONAS. More of an ash than a dirt, then?

Dr. NAUGLE. Yes. Well, the actual basalt that you see tends to be a hard rock on the surface of the earth. On the other hand, on the surface

of the moon it has been pulverized and beat up by meteorites coming in so that it tends to be made of sort of a pulverized debris.

TEMPERATURE MEASUREMENTS

Mr. EVINS. Did you measure the temperature of the surface?

Dr. NAUGLE. We had instruments on the spacecraft itself to measure the temperature of the spacecraft from which we could determine the temperatures of the lunar surface near the spacecraft. We didn't have instruments to measure the temperature of the surface material directly.

The first time that we will carry instruments up to measure the temperature of the surface directly will be on Apollo in the geophysical station that Apollo takes up and deposits on the surface of the moon. We will be able to put thermometers down and actually measure the temperature at various depths.

JUSTIFICATION MATERIAL FOR CONSTRUCTION AT HOUSTON

Mr. EVINS. Mr. Reporter, put in the record pages CF 3–2 through 3–6 and 3–8 through 3–10.

(The pages follow:)

Installation Summary

NASA installation: Manned Spacecraft Center.
Cognizant program office for installation: Manned Space Flight.
Location of installation: Houston, Tex.
County: Harris.
Nearest city: Houston, Tex.
Installation mission: The manned Spacecraft Center has as its primary mission the development of spacecraft for manned space flight programs. The Center is also responsible for manned space flight operations, conduct of astronaut training, and the earth resources program.

[In thousands of dollars]

Project line item	Cognizant office	Fiscal year 1959 through current year	Fiscal year 1969 (estimated)	Future years (estimated)	Total all years (estimated)
Modifications to the environmental testing laboratory.	MSF	48,229	1,500	.....	49,729
Addition to the flight crew training facility.	MSF	1,235	1,600	.....	2,835
All other projects		44,057	.....	.....	.....
Total		93,521	3,100	.....	.....

Modification to the Environmental Testing Laboratory

Authorization line item: Manned Spacecraft Center.
Program office for the project: Office of Manned Space Flight.
Location of project: Houston, Harris County, Tex.
Cognizant NASA installation: Manned Spacecraft Center.
Type of construction project: Modification.
Funding:

Fiscal year 1968 and prior years	$48,228,500
Fiscal year 1969 estimate	1,500,000
Total funding through fiscal year 1969	49,728,500

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				
Equipment:				
Vacuum systems	Lump sum		$545,000	$545,000
Electrical power systems	do		560,000	560,000
Manned qualification systems	do		245,000	245,000
Instrumentation and data acquisition systems	do		150,000	150,000
Design				
Fallout shelter (not feasible)				None
Total				1,500,000

PROJECT PURPOSE

To provide the necessary modifications and additions to improve the manned rated capability and operational efficiency and effectiveness of the Environmental Testing Laboratory.

PROJECT DESCRIPTION

The project will provide for modifications and additions to various systems associated with the vacuum chambers which are located in the Environmental Testing Laboratory. Specifically, the project involves major work in the following areas:

Vacuum systems.—Repair and/or replacement of worn pumps, valves, piping, and related systems as well as installation of additional equipment to increase vacuum pumping efficiency.

Electrical power systems.—Installation of emergency power equipment and associated switching arrangements to assure continuous power to critical tests.

Manned qualification systems.—Installation and modification of environmental control systems, biomedical monitoring equipment and the chamber ingress/egress system to provide the necessary support and safety features for more complex manned operations.

Instrumentation and data acquisition systems.—Installation and replacement of equipment to increase the quality of test data and provide sufficient capability to satisfy more complex test programs.

PROJECT JUSTIFICATION

This project is required to upgrade the environmental chamber systems in order to maintain a high level of operating efficiency and reliability and to keep pace with test requirements.

The Apollo Applications Program (AAP) will involve the development of a long-duration operational capability under two concepts not previously demonstrated in manned space flight. The first is that of open-ended, long-duration missions which will continue as long as no major flight hardware problems arise and sufficient expendables remain. The second concept is that of resupply, revisitation, and reuse of multimodule assemblies left in orbit. The test of hardware in support of these concepts will require that the long duration operational potential of such hardware be established as rapidly and economically as technology will permit. Validation of hardware capabilities to meet AAP open-ended missions will require extensive use of systems engineering analysis and evaluation of previous test results. However, ground test programs must also be accomplished to assure appropriate levels of confidence in achieving primary mission objectives and maintaining crew safety. In order to achieve these confidence levels, long duration thermal vacuum testing must be accomplished.

The thermal vacuum tests for AAP are required to demonstrate space hardware operation and man-machine performance under normal and emergency modes during simulated phases of the space mission; to determine thermal modes and provide baseline data for hardware development; and to determine

thermal response and performance characteristics of structures, systems, and subsystems in a simulated space environment. Such testing must be accomplished on all new hardware which has not been previously ground or flight tested, and on hardware tested in previous programs in order to qualify it for long-duration AAP requirements.

The AAP payload will have several new modules added to the basic Apollo such as the Apollo telescope mount, multiple docking adapter, airlock and orbital workshop. The standard block II Apollo command service module (CSM) configuration and the Apollo lunar module ascent stage will also be modified to meet new requirements. Examples of some of the associated systems which must be validated to meet AAP open-ended misisons are: two-gas activation control system to pressurize the S–IVB workshop, and an environmental conditioning system for the airlock/multiple docking adapter and the S–IVB workshop; power distribution system for receiving power supplied by CSM fuel cells and the S–IVB workshop; control and displays for operation of Apollo telescope mount experiments and support subsystems.

The heat loads experienced with recent testing in the environmental chamber have established that additional helium refrigeration capacity is required for the cryogenic pumping system in order to provide adequate redundancy in the event of failure of an existing refrigeration unit. The additional unit will also prevent contamination of the chamber due to the uncontrolled reentry of cryogenically deposited material in the chamber which can result in lengthy and costly test aborts. Since the chamber will have operated over 1,500 hours without major rehabilitation, certain components of the vacuum systems must be repaired or replaced to maintain operating efficiency.

The emergency power system must be expanded to include additional critical loads such as for helium refrigeration, data handling systems, air handling and chilled water systems, and compressed air units so that a test will not have to be aborted in the event of a power failure. Additional transformers must also be installed to provide adequate redundancy for the primary electrical power system. To date failure has been experienced in four of the eight existing transformers which dictates the installation of redundant equipment.

With respect to the manned qualification systems, environmental control systems to provide the two-gas environment must be installed as well as improved and larger capacity crew life support systems for longer duration testing. For safety reasons, the existing ingress/egress chamber must be modified to provide the proper interface with the new modules being tested. Adequate biomedical and life support systems must also be provided to insure the safety of the chamber occupants.

The instrumentation systems and data acquisition system consist of computers and items necessary to accept the outputs from computers and issue data in a format compatible with the spacecraft and ground support equipment. Testing new spacecraft hardware will involve an amount of test data which will exceed the handling capability of existing equipment. Therefore, modifications to existing computer systems and additional information channels must be provided.

Estimated future year funding for this project.—Due to the complex and sophisticated nature of this facility, $1 to $2 million will be required on a yearly basis to retain present capabilities and incorporate technological advances.

Addition to the Flight Crew Training Facility

Authorization line item: Manned Spacecraft Center.
Program Office for the project: Office of Manned Space Flight.
Location of Project: Houston, Harris County, Tex.
Cognizant NASA installation: Manned Spacecraft Center.
Type of construction project: Addition.
Funding:

Fiscal year 1968 and prior years	$1,235,000
Fiscal year 1969 estimate	1,600,000
Total funding through fiscal year 1969	$2,835,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				$1,135,000
Site preparation	Lump sum		30,000	30,000
Utilities	do		23,000	23,000
Building addition	Square feet	32,000	28.50	912,000
Air handling system	Lump sum		90,000	90,000
Bridge cranes	do		80,000	80,000
Equipment				455,000
Neutral buoyancy test tank and support systems	Lump sum		350,000	350,000
Instrumentation	do		75,000	75,000
Medical equipment	do		30,000	30,000
Design				
Fallout shelter				10,000
Total				1,600,000

PROJECT PURPOSE

To provide a zero gravity environment for astronaut crew training, development of spacecraft and operational procedures, and the evaluation of extravehicular activity tasks and devices.

PROJECT DESCRIPTION

This project provides for the construction and outfitting of a 32,000-square-foot, high bay laboratory addition to the flight crew training facility. The structure will have a steel frame with precast concrete wall panels. All utilities will be extended from the existing building, and paved access areas will be provided.

The key element of the project is a 60-foot-diameter neutral buoyancy water test tank with a height of 30 feet, which will be used to simulate the zero gravity environment needed for astronaut training, and engineering and development activities. Support space for maintenance, spacecraft mockups, control room, and storage for diving gear and equipment will also be included.

The project will provide all necessary support equipment such as water treatment facilities, special lighting, photographic equipment, access platforms, communication systems, and medical equipment.

PROJECT JUSTIFICATION

During early Gemini extravehicular flights, it became apparent that the methods used for training astronauts in tasks to be performed in a zero gravity environment were not adequate. It was determined that a facility was required which could provide a capability to simulate a zero gravity environment for long duration activities associated with extravehicular crew training, development of operational procedures, and evaluation of spacecraft hardware and equipment arrangements. Subsequent studies indicated that, by operating with the astronauts and flight hardware immersed in water, a neutral buoyancy condition could be achieved that realistically simulates a zero gravity condition. In order to meet the time critical needs of the Gemini and early Apollo programs, outdoor swimming pools and a small tank at MSC were used to meet specific tasks which required early solution. However, outdoor swimming pools do not provide the depth, protected environment, or support facilities required to conduct a comprehensive and controlled test program. Also, the existing tank will not accommodate the larger sized spacecraft modules required for the test and training programs which will be conducted in support of future missions.

Future missions will involve a variety of spacecraft hardware such as the air lock module, Apollo telescope mount, and orbital workshop which will be integrated with the modified Apollo command service module and lunar module ascent stage through the multiple docking adapter. The activation and operation of such an integrated spacecraft will require extensive extravehicular and intravehicular activity involving translation between modules; transfer, assembly, attachment and operation of equipment; and the retrieval and storage of data.

Thus, this facility will provide for astronaut training in crew tasks and evaluation of man-equipment interfaces under a simulated zero gravity environment, and, as a consequence, assure a completely reliable and successful mission.

Estimated future year funding for this project.—None.

Marshall Space Flight Center

Mr. Evins. Look at Marshall Space Flight Center. This is the primary center for design, development, and test of launch vehicles and space transportation systems for manned-space flights. This includes the Michoud facility, the Slidell central computer facility, and the Mississippi test facility.

It is now managing the Saturn IB program, Saturn V program, and selected payloads for Apollo applications, such as the Apollo telescope mount and the S–IVB orbital workshop.

This is another one of your important facilities. You have mentioned management responsibilities.

You have at this center, 1,797 acres under a nonrevokable use permit from the Army and a capital investment of $551 million dollars.

The Michoud facility has about 3,483,862 square feet with a capital investment of $142.3 million. The total facility investment for the Marshall Center and the facilities allied with it is $927,357,000, about another $1 billion.

Is all this owned by the Government?

Mr. Webb. Yes, sir; it is.

Mr. Evins. Except that assigned by the Army.

Mr. Webb. And we have easement rights on 118,000 acres of land around the fee land at the Mississippi test facility in order to exlude people during the dangerous periods of testing.

Mr. Evins. Personnel costs at the Marshall Center are decreased. Travel remains the same. Automatic data processing is decreased. The facilities costs are down. You show an overall decrease from $123 million to $118 million at the Marshall Center.

We will place pages 2–19 through 2–22 in the record.

(The pages follow:)

Administrative Operations—Fiscal Year 1969 Estimates

George C. Marshall Space Flight Center

MISSION

The Marshall Space Flight Center became a part of NASA in July 1960, and has served as NASA's primary Center for the design, development, and test of launch vehicles and space transportation systems for manned space flights. Marshall Space Flight Center also includes the Michoud Assembly Facility at New Orleans, La.; the Slidell central computer facility nearby; and the Mississippi Test Facility in southwest Mississippi. Building on the wealth of experience gained through work on Army missile programs, Marshall Space Flight Center has, since its transfer from the Army, successfully completed the Saturn I program, and is now managing:

1. The Saturn IB program which provides a launch vehicle for Apollo spacecraft development and serves as a carrier for large scientific satellite payloads.
2. The Saturn V program which will provide the launch vehicle for actual manned lunar landing missions, planetary missions, and future very large scientific satellite payloads.

3. Selected payloads for Apollo applications missions, such as the Apollo telescope mount and the S–IVB orbital workshop.

In carrying out its management responsibilities for these programs, Marshall Space Flight Center has developed the capability to—

(1) Design, develop, and manufacture large launch vehicle systems, including vehicle systems test and integration;

(2) Conduct test programs such as the static testing program for the S–IC and S–II stages at the Mississippi Test Facility;

(3) Design, develop, and test large launch vehicle engines such as the H–1, J–2, and F–1 systems; and

(4) Develop and integrate scientific experiment payloads packages to be flown on Saturn-Apollo vehicles or subsequent post-Apollo missions.

In support of its assigned programs, Marshall Space Flight Center also maintains the research and development capability to conduct advanced studies on launch vehicle and space systems, space navigation techniques, astronautics, and space science investigations. Its capability for both research and for the management of industrial operations give Marshall Space Flight Center a highly flexible base for manned space programs.

DESCRIPTION

Operations of Marshall Space Flight Center are conducted at three primary locations.

The first location, the main Marshall Space Flight Center site, is near Huntsville, Ala., on Army property at the Redstone Arsenal. The Center occupies 1,797 acres under a nonrevocable use permit from the Army, and 64 leased acres. The capital investment as of June 30, 1967, is $551,022,000. Certain facilities such as the Redstone Arsenal Army Air Field and some utilities are used jointly by NASA and the Army. The Huntsville location has deepwater access via the Tennessee, Ohio, and Mississippi Rivers.

The second location, the Michoud Assembly Facility, is located 15 miles east of New Orleans, La. The main facility occupies 890 acres. The Slidell Central Computer Facility, a satellite facility 20 miles to the northeast, occupies 14 additional acres bringing the total acreage to 904. The capital investment as of June 30, 1967, is $142,382,000. Michoud Assembly Facility space totals 3,483,862 square feet, including the main assembly plant, covering an area of 43 acres under one roof. The vehicle prime contractors produce the Saturn IB and Saturn V booster stages at this location. The Michoud Assembly Facility is on the Gulf Intracoastal Waterway, and has deepwater access via the Mississippi River.

The third location, the Mississippi Test Facility, is in southwest Mississippi, approximately 50 miles northeast of New Orleans, La. Total land area is 138,870 acres of which 13,428 acres make up the actual test area owned by NASA. The remaining 125,442 acres are held as a buffer zone. In the buffer area, 7,568 acres are owned by NASA, and 117,874 acres are under restrictive easement. Capital investment for the Mississippi Test Facility as of June 30, 1967, is $233,953,000. Test stands include a dual-position stand for testing the Saturn V first stage (S-IC), and two stands for testing the 1,000,000-pound thrust Saturn V second stage (S-II). The vehicle prime contractors are responsible for conducting tests on the stands. The site has deepwater access for transporting large boosters via the Pearl River and the Intracostal Waterway.

The total capital investment of the Marshall Space Flight Center, including work in progress and contractor-held facilities at various locations, as of June 30, 1967, is $927,357,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$90,259,000	$91,184,000	$87,954,000
Travel	3,098,000	2,945,000	2,945,000
Automatic data processing	10,620,000	9,486,000	9,094,000
Facilities services	11,419,000	9,298,000	8,741,000
Technical services	4,438,000	2,564,000	2,366,000
Administrative support	8,867,000	7,641,000	7,078,000
Total, fund requirements	128,701,000	123,218,000	118,178,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Apollo	4,502	3,015	2,791
Apollo applications	526	1,535	1,704
Advanced missions	140	150	175
Space science and applications:			
Physics and astronomy	5	9	12
Lunar and planetary	61	11	16
Launch vehicle procurement	10	8	7
Bioscience	1	5	7
Space applications	3	4	3
Advanced research and technology:			
Basic research	53	45	59
Space vehicle systems	100	97	94
Electronics systems	95	90	93
Human factor systems	14	14	18
Space power and electric propulsion systems	3	11	12
Nuclear rockets	52	24	24
Chemical propulsion	14	17	18
Tracking and data acquisition	4	10	12
Technology utilization	10	7	7
Subtotal, positions by program	5,593	5,052	5,052
2. Support positions:			
Director and staff	151	137	137
Administrative support	714	671	671
Research and development support	628	526	526
Subtotal, support positions	1,493	1,334	1,334
Total, permanent positions	7,086	6,386	6,386

TRAVEL

Mr. JONAS. This is an insignificant item in comparison with the whole program but still it is about $3 million a year for travel. This strikes me as being a lot of travel. Is all that absolutely necessary? Can't you cut down some of this travel?

Dr. MUELLER. We have cut down on travel, as you can see. We have been going down.

Mr. JONAS. You are not down any in 1969 over 1968. It is exactly the same figure, $2,945,000. That provides travel for a lot of people.

Dr. MUELLER. We have the cadre of very skilled people at Marshall. At the same time it is less expensive to have them travel to Cape Kennedy and to the contractors' plants in order to manage the program than it is to try to locate people with that knowledge who have to work together in order to understand the total system.

Mr. JONAS. Much of this travel is recurrent travel to the different places by the same people.

Dr. MUELLER. And bringing back the information needed in order to integrate the total launch vehicle.

So you see, these travel operations are really the glue that ties together all of the operations around the country that go to make this launch vehicle the successful vehicle it is.

Mr. JONAS. How is that cost calculated? Is that commercial travel?

Dr. MUELLER. Yes.

NUMBER OF NASA AIRPLANES

Mr. JONAS. Do you own any airplanes?

Mr. WEBB. Four Gulfstreams. We have a very limited number of aircraft for this kind of travel.

Mr. JONAS. I guess it is cheaper to travel commercial than to operate a plane unless you have a full load.

Mr. WEBB. We favor using the commercial systems whenever possible to avoid running our own systems. We also want to be able to get rid of things when we do not need them.

Mr. JONAS. You have a rule that this travel is all performed at the cheapest rate available?

Mr. WEBB. Yes, sir.

Mr. Jonas, I would like to point out here that Marshall Space Flight Center not only Mississippi Test and Michoud facility which assembles these big rockets and tests them, but they also monitor about 40,000 parts continuously. That means they have a reporting system from thousands of contractors' plants.

So these central in-house capabilities provide a technical interface with industry that is unique with NASA. It is something we have developed beyond anything else anywhere in the Government, in my view.

A lot of this travel is where contractors run into serious problems. We are going to have to pay for the solution. We want to make sure the best solution is put into effect. So our men go there and work directly with the contractor to produce an end result that fits with the whole program, so the program does not get delayed for some minor matter.

CONSTRUCTION AT MICHOUD

Mr. EVINS. Operations at Marshall have been cut back. The only construction is at the Michoud facility, $400,000. This is to provide for rehabilitation, alteration, and improvements of utility systems and equipment.

Mr. TALCOTT. With regard to travel, do you pay the employees of the contractors to come to some of your centers?

Mr. WEBB. We do not pay travel costs directly to the employees, but where a contractor sends his employees to work with our people in a place like Huntsville, he pays them under the contract and NASA ultimately pays their travel. It is a part of the contract costs reimbursed to the contractor.

Mr. TALCOTT. But the expense of contractor travel is not in this travel request?

Mr. WEBB. No, sir.

GODDARD SPACE FLIGHT CENTER

Mr. EVINS. Space Science and Applications installations, you have several of these.

Gentlemen, we should go out to the Goddard facility, but we will postpone it.

Mr. WEBB. It is a very important place to see.

Mr. EVINS. It was established in 1959 as the first major U.S. laboratory devoted to the exploration of space. It conducted a wide range of programs.

As a result, Goddard has developed many diverse capabilities: the management of a complex satellite project; the development of wholly integrated spacecraft; the development and operation of a satellite

tracking network; and scientific research to include both theoretical studies and the development of many significant scientific experiments flown in satellites.

Although the majority of Goddard Center's personnel are at Greenbelt, other personnel are located in New York City and throughout the world.

Mr. Administrator, where are the other personnel?

Dr. NAUGLE. We have to have these Goddard people at the tracking and data acquisition sites around the world.

In the case of Goddard Institute for Space Studies in New York, we feel that is a good place to have a group of theoretical space scientists.

GODDARD INSTITUTE

Mr. EVINS. What is the nature of the Institute in New York?

It is a little crowded up there. You ought to have a little dispersal. We have lots of problems in the cities.

Dr. NAUGLE. One of the primary reasons for having it in New York City is the educational institutes that are there. This is operated very closely in conjunction with Columbia University. There are a number of the staff at the Institute who hold joint teaching positions there. There are a number of students and a number of the faculty from the universities there.

Mr. EVINS. Can you make grants to the students and faculties without having a subplant of Goddard in New York?

Mr. WEBB. I think it is important to recognize that we are following the policy of encouraging very advanced theoretical scholars on the campuses of the better universities to approach the most difficult problems in the space area. The Institute not only identifies certain of these major problems, it provides ways to work at them where scientists from as far apart as Boston and New Haven and Princeton come together. This is a center in which some of the most advanced theoretical thinkers can come together with a few NASA people.

Mr. EVINS. When was the Institute started, Mr. Administrator?

Mr. WEBB. It was in existence when I came aboard in 1961.

Dr. NAUGLE. It started right around 1960, 1961.

Mr. EVINS. How many people are involved?

Mr. WEBB. Thirty-four.

Mr. EVINS. How much is the annual cost?

Dr. NAUGLE. The total cost in 1968 is estimated to be $4.668 million—I am giving you now the administrative operations plus the R. & D. cost—in 1969 it is about $3.364.

Mr. EVINS. You have advanced work at Cal Tech and MIT.

Life magazine had an article not so long ago listing the high concentration of intellectual centers where they had a large number of Ph. D.'s. They listed Knoxville and Oak Ridge as the only one in the Southeast.

EFFORTS AT GODDARD INSTITUTE

Mr. WEBB. This is only 34 people. They developed the theoretical input to computers and visual systems such as television tubes by which you could examine the dynamics of the entire atmosphere of the earth by an input that was accurate with respect to data.

So you could actually look at the dynamics.

Mr. EVINS. Are they working on future developments?

Mr. WEBB. They are looking at things that are going to be done by the practical people 10 or 15 years in advance. You must develop the basic theoretical concept and then apply it in these more practical ways. Much of what we are doing today comes from what this Institute has developed in the way of handling massive amounts of date from engineering and theoretical concepts which are fed in and come out in a way the human mind can understand them and direct the next activity to a more practical thing.

Mr. EVINS. Supply for the record a statement of what they do up there.

Mr. WEBB. We will be happy to.

(The information follows:)

INSTITUTE FOR SPACE STUDIES, GODDARD SPACE FLIGHT CENTER

Operating arrangements: (1) Mission, (2) Research program, (3) Personnel, (4) Research reports and conferences, (5) GISS-university collaboration, and (6) Reasons for location in New York.

(1) *Mission.*—The Goddard Institute for Space Studies (GISS) was established in 1961 as a New York office of the Goddard Space Flight Center. The mission of GISS is (*a*) to carry out research in space science in support of Goddard programs; (*b*) to perform its research in the closest possible collaboration with universities in its neighborhood so as to arouse the interest of university scientists and students in space science and increase participation of qualified personnel in this field. The GISS operation depends upon a small civil service staff, which is used to generate a large volume of research by working closely with neighboring universities in such a way to develop a maximum university contribution to the space science prgoram.

(2) *Research program.*—The research program is divided equally between astronomy and atmospheric sciences.

In astronomy, the program includes investigation of the origin and life cycle of stars; the origin of the solar system, physical and chemical conditions at the time of formation of the Moon and planets, and comparative studies of the structure of the Moon, Earth, Mars, and Venus. The astronomy program is partly theoretical, relying on data acquired by spacecraft and ground-based telescopes. There is also an observational program in infrared astronomy, including balloon and aircraft flights of special telescopes designed to investigate the virtually unexplored "far infrared" portion of the sky spectrum.

In atmospheric science, the program concentrates on the study of data acquired by satellites and space probes including Tiros and Nimbus in the terrestrial atmosphere and Mariner flights to Mars and Venus. The Tiros and Nimbus consist of basic theoretical research and the factors controlling large-scale atmospheric motion. The Mariner study, involving a GISS staff member as coexperimeter, concerns the interpretation of data received on the atmospheres of Mars and Venus.

(3) *Personnel.*—Goddard Institute personnel total approximately 200. This number includes 34 civil service scientists and supporting staff, 20 National Academy of Sciences research associates, 75 contractor personnel for computing and library services, and also part-time student research assistants and WAE and nonsalaried faculty consultants. The Institute contains the equivalent of 58 full-time professional personnel working in space science.

The Goddard Institute has a civil service scientific staff of nine persons. Senior member of the staff is Dr. Robert Jastrow, Director of the Goddard Institute, editor of the Journal of Atmospheric Science, and adjunct professor of geophysics at Columbia University.

The University programs of GISS enable this small civil service staff to make a larger impact on the space research activity than the number would indicate.

WAE employees and nonsalaried consultants play an important part in the research activity. All WAE employees are senior university scientists with established records of research productivity. In addition, 11 university faculty

members work with the GISS staff without salary. These faculty members have desks on GISS premises.

The GISS research staff is supplemented by an average of 20 postdoctoral resident research associates supported through a NASA grant to the National Academy of Sciences, research associates, and Ph. D.'s who have been working in space-related fields and are continuing their work in space science at the GISS. The research associates are a rotating staff drawn mostly from universities who normally stay for 1 year.

(4) *Research reports and conferences.*—GISS research results and conference reports are published in NASA reports and scientific journals and in book form. Thus far, GISS has published over 300 NASA reports and journal articles. In addition, 15 books have been published or are in the process of being published.

These reports and volumes are the main record of the research product of GISS. They are widely distributed among Government and university scientists in the United States.

GISS sponsors an average of two meetings each year on problems in space science. One of these is usually in the field of astronomy and the other in the fields of planetary or atmospheric science. Topics usually are chosen each year on the basis of their relevance to recent or planned spacecraft missions of major interest.

The proceedings of these conferences have been edited into research reports in the various fields.

(5) *GISS-university collaboration.*—GISS works closely with Columbia University, New York University, the State University of New York at Stony Brook, and other universities in the area, on programs to produce research and simultaneously develop faculty and student interest in space science. The key element in this collaboration is the series of adjunct or part-time faculty appointments for GISS staff members. These appointments enable the inhouse GISS staff to offer courses in space science and supervise research leading to the Ph. D. degree on space science topics. GISS staff members currently holding adjunct faculty appointments at universities in the New York area number nine. Fifteen courses in space science were offered last year by GISS staff members through special arrangements of working hours. Thirty-seven graduate students working at GISS do Ph. D. research in space science under supervision of GISS staff members holding faculty appointments. Thirty Ph. D. degrees have been granted by New York area universities for work supervised by GISS staff members.

These arrangements provide a double benefit to the space program. First, the program is strengthened by the work of competent university scientists and students who collaborate with the Goddard Institute staff; second, a foundation is laid for future U.S. achievements in space research by training graduate research students in space science.

(6) *Reasons for location in New York.*—In order to function in the manner described above, the institute had to be set up near universities pursuing active programs in fields related to space research. The best locations were those containing a complex of universities providing very large resources in science faculty members and student enrollment. The New York area was chosen because the particular fields of research in which its university faculties are strongest are also the ones of greatest importance in the institute program.

Location in close proximity to a suitable university complex maximized the effectiveness of GISS-university collaboration by (*a*) enabling students to do space science research under GISS staff members without disruption of their academic training; (*b*) enabling the GISS staff to offer courses without disruption of other duties; (*c*) increasing the attendance of university faculty members and students at meetings and colloquia organized by the institute.

EMPLOYEES AT INSTITUTE

Mr. JONAS. If I may ask a question or two on that, where is the Institute located?

Mr. WEBB. It is in a building just off the campus in rented space.

Mr. JONAS. We have 34 people there at all times.

Mr. WEBB. Yes, sir; they travel to these various other institutions. They are based there.

Mr. JONAS. What are they—scientists?

Mr. WEBB. They are very advanced theoretical scientists, theoretical physicists.

Mr. JONAS. Are they permanent employees?

Mr. WEBB. Yes, sir.

Mr. EVINS. It is a branch of Goddard. They report through Goddard.

Mr. WEBB. They also conduct seminars where very advanced thinkers meet on specific subjects. They identify about 50 or so of the brightest possible doctoral men in these advanced fields and bring them there for about a year of instruction in the graduate schools at Columbia, in which some of our people teach.

INTERSTELLAR MEASUREMENTS

Dr. MUELLER. May I say a word because I had the the opportunity of going up there with our Directors about 6 months ago, and got a briefing on their activities. They really are a very capable and very outstanding group.

One of the things that they have been working on, and had been predicting—their theoretical people—was that one could see the light from the formation of our particular universe. That does not sound possible, but nevertheless it is possible to measure the mean temperature of the interstellar space, and by making that measurement, you are able to determine when the universe started.

One of the theoretical results that they have obtained is that one of the possible explanations of the beginning of our universe is available through measurements of interstellar space.

It has a very profound effect on the whole understanding of how the universe was started. That is a theoretical calculation, but there have been corroborating experimental measurements that have led to this result. There are other theories, but this is one of the very interesting and most significant theroetical and experimental results that I know of.

CONSISTENT WITH GEOLOGY

Mr. JONAS. How does that result compare with the opinions of the geologists?

Dr. MUELLER. It is consistent. They do not have a firm indication that far back, but it is consistent with one of the most logical theories. In any event, they are outstanding leaders, young people, who are serving a tremendously useful purpose for the space program, because that relates to what we are going to be doing in space 10 or 20 years from now.

Mr. EVINS. You list as some of your significant achievements in 1967: to map the sun, to investigate lunar space and events from a point midway to the moon.

GODDARD INSTITUTE

Dr. NAGLE. Mr. Chairman. I would like to say a word or two more about the Goddard Institute. What we have, as Dr. Mueller has mentioned, is a very good group of theoretical physicists at this Institute. We not only have those people thinking about the problems of space in terms of what the future is, but as Mr. Webb has pointed out, also in terms of looking at the data which is coming in from the meteorological satellites and seeing how best to use that. By having them in New York we involve at least their equal number and perhaps two or three times their number of the very best, very competent scientists in the New York area. That is the primary reason for having them in the New York area.

It is sort of a synergistic effect, the fact of being able to work with the other groups of scientists there, and getting them to think about the space program, its future and the practical applications of it.

Mr. WEBB. Including specifically the complex phenomena that relates to the sun as our nearest star and the relation of the sun to other stars. This is the kind of thing that has to be done if we are going to have advanced theoretical work.

Mr. EVINS. You bring them down here sometime and let them see some of the practical realities of Congress.

Mr. WEBB. We would like to have Dr. Jastrow this afternoon or tomorrow.

JUSTIFICATION MATERIAL

Mr. EVINS. Bring him down. We will place in the record pages 2–34, 2–35, and 2–36.

(The pages follow:)

ADMINISTRATIVE OPERATIONS—FISCAL YEAR 1969 ESTIMATES

Goddard Space Flight Center

MISSION

The Goddard Space Flight Center, established in 1959 as the first major U.S. laboratory devoted to the investigation and exploration of space, conducts a wide-ranging program of experimentation in the space sciences. As a result, Goddard Space Flight Center has developed many diverse capabilities: the management of complex satellite projects; the development of wholly integrated spacecraft, ranging from systems engineering to development and integration; the development and operation of satellite tracking networks; data acquisition and analysis; and scientific research to include both theoretical studies and the development of many significant scientific experiments flown in satellites.

Although the majority of Goddard Space Flight Center's personnel are at the Greenbelt site, other personnel are located at the Goddard Institute for Space Studies in New York City; and throughout the world, managing the operation of satellite tracking and communications network stations.

Goddard Space Flight Center is responsible for the development of the sounding rocket program; the management of communications and meteorological satellite programs, such as the applications technology and Nimbus satellites; the management of scientific satellite projects to include the Orbiting Geophysi-

cal (OGO), Orbiting Solar (OSO), and the Orbiting Astronomical (OAO) Observatories and the Explorer series; project management of NASA's Delta launch vehicle; and management and operation of two worldwide tracking and data acquisition networks, the Space Tracking and Data Acquisition Network and the Manned Space Flight Network.

Significant achievements of the Goddard Space Flight Center in 1967 included:

Scientific satellites.—Major scientific satellites successfully orbited in 1967 included OSO III and IV, to map the sun; Explorer 34, to investigate lunar space and lunar events from a point midway to the moon; Explorer 35, the lunar anchored interplanetary monitoring probe designed to undertake a detailed study of the interaction between the solar wind and the moon (this represented the 50th successful launch using the Goddard-managed Delta booster); OGO–D, designed to obtain data on particles, fields, and characteristics of the earth's atmosphere; also the U.K. III satellite, an international cooperative project with the United Kingdom. The Center further assisted in the launch of the first Italian satellite, San Marco, from an Indian Ocean platform.

Meteorological/communications satellites.—During 1967, Goodard Space Flight Center, on behalf of the Environmental Science Services Administration, launched three operational weather satellites, ESSA IV, V, and VI. The ESSA concept is based on the highly successful Tiros series. Three Intelsats, operational communications satellites of the Communications Satellite Corp., were also launched by this Center during 1967. During the year, Goddard Space Flight Center also successfully orbited the Applications Technology Satellite III which, in addition to meteorology, serves space-borne communications and scientific research. This satellite obtained the first color weather photographs from a synchronous orbit.

Sounding rockets.—The sounding rocket program consisted of 162 scientific rocket launchings in 1967, including 20 launches in conjunction with foreign scientists.

Tracking and data acquisition.—The Goddard-managed Space Tracking and Data Acquisition Network provided communications and tracking coverage for unmanned scientific and applications satellites in 1967. At year's end, the Manned Space Flight Network provided global tracking support for the first unmanned Apollo flight (Apollo 4). Insertion ships and tracking aircraft were being readied to support on-coming manned Apollo flights in 1968.

DESCRIPTION

The Goddard Space Flight Center, located 15 miles northeast of Washington, D.C., and 1 mile east of the Baltimore-Washington Parkway, Greenbelt, Md., exit, is situated on a 553-acre main site. Three additional plots of 639 acres comprise our remote site area and contain the Goddard Antenna Test Range, the Goddard Optical Facility, the Propulsion Research Facility, the Magnetic Fields Component Test Facility, the Attitude Control Test Facility, and the Network Training and Test Facility. Total capital investment as of June 30, 1967, under the cognizance of Goddard Space Flight Center, including the Manned Space Flight Network, the Space Tracking and Data Acquisition Network, Apollo ships, and the Goddard Space Flight Center main site at Greenbelt, Md., is $495,734,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$47,089,000	$49,988,000	$52,508,000
Travel	2,630,000	2,183,000	2,183,000
Automatic data processing	7,284,000	5,897,000	5,916,000
Facilities services	8,110,000	5,634,000	5,432,000
Technical services	1,365,000	746,000	736,000
Administrative support	4,591,000	4,077,000	3,819,000
Total, fund requirements	71,069,000	68,525,000	70,594,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Apollo	2	4	5
Apollo applications	1	12	16
Space science and applications:			
Physics and astronomy	1,053	1,028	1,073
Lunar and planetary	21	25	20
Launch vehicle procurement	41	32	32
Bioscience	11	11	10
Space applications	363	359	409
Advanced research and technology:			
Basic research	5	2	2
Space vehicle systems	48	45	49
Electronics systems	71	60	72
Space power and electric propulsion system	44	28	44
Chemical propulsion	6	8	15
Tracking and data acquisition	816	795	787
Technology utilization	4	3	3
Subtotal, positions by program	2,486	2,412	2,537
2. Support positions:			
Director and staff	16	15	15
Administrative support	905	828	848
Research and development support	375	431	441
Subtotal, support positions	1,296	1,274	1,304
Total, permanent positions	3,782	3,686	3,841

PERSONNEL INCREASE AT GODDARD CENTER

Mr. EVINS. You testified yesterday about the increased personnel for Goddard. It goes up from 3,686 to 3,841. Tell us again about this increase of 155 personnel.

Mr. LILLY. The increase of 155 people results from our taking over three support contract operations at the Goddard Center and putting them under civil service. This requires 155 people for a total increased cost in Administration Operations of $1.6 million.

Mr. EVINS. Did the contractors default?

Mr. LILLY. No; these were the specific contracts that the Civil Service Commission had looked at. In the judgment of the general counsel of the Civil Service Commission the operations under them were proscribed by personnel statutes.

Mr. WEBB. The opinions stated that we should be using civil service people there instead of contract personnel.

WALLOPS STATION

Mr. EVINS. Let us take a look at Wallops Station.

At Wallops Station, the primary mission is to prepare, assemble, and launch experimental payloads, position them in space, track them, and acquire meaningful data.

In addition to supporting the launching of sounding rocket propelled experiments, Wallops has a variety of research projects. A sizable effort is devoted to international cooperation with 50 countries

which have sent representatives to Wallops Station in the past few years to observe its operation.

The Owl series of Universe Explorers is well underway. Responsibility for the management of the Owl series of Explorers provide Wallops with the capability of managing a project from initial design to launch. In the past calendar year you sent up 368 sounding rockets and 220 test rockets.

INTERNATIONAL PROJECTS

You also participated in a number of international projects. These countries are given the benefit of our know-how, but what do we get from them in these exchanges?

Dr. NAUGLE. We do teach them how to launch sounding rockets. We worked with the Italians to train them so that they could launch the Scout from their San Marco facility off the East Coast of Africa.

We get all the data that these people obtain from these experiments. In the case of the San Marco launch site, we will ask the Italians to launch some of our satellites in order to obtain the equatorial-type orbit that you can get from this facility.

(Discussion off the record.)

JUSTIFICATION MATERIAL

Mr. EVINS. You have a total capital investment at Wallops of $100,062,000. Costs go up to $8,908,000, an increase from last year. Personnel remains the same. We will place in the record pages 41, 42, and 43.

(The pages follow:)

ADMINISTRATIVE OPERATIONS—FISCAL YEAR 1969 ESTIMATES

Wallops Station

MISSION

Wallops Station was established as the pilotless Aircraft Research Station of the National Advisory Committee for Aeronautics (NACA) in 1945. This installation's early mission included wind tunnel and laboratory investigations of a variety of aerodynamic problems of flight, as well as serving as a launch site for meteorological and sounding rockets. When the resources and facilities of NACA were transferred to the newly established National Aeronautics and Space Administration (NASA) in 1958, this facility was renamed Wallops Station.

Today, the primary mission of Wallops Station is to prepare, assemble, and launch experimental payloads; position them correctly in space at the right velocity; track them, and acquire meaningful data. The data are then processed and turned over to the experimenter to be analyzed. The rocket-borne experiments flown from the Wallops Island range are conceived, and for the most part designed and built by scientists and engineers in the laboratories and research centers of NASA, other Government agencies, colleges and universities, and the world-wide scientific community. They are brought by teams of experimenters to Wallops Station where the payloads are checked out, prepared for flight, and mated to an appropriate launch vehicle. Wallops personnel participate in these latter tasks and perform those engineering functions necessary to design and establish ground facilities and instrumentation systems compatible with test requirements.

In addition to supporting the launching of sounding rocket-propelled experiments, Wallops uses its facilities for a variety of other research projects. The testing and development of components and instrumentation to be flown in later types of vehicles and spacecraft is a continuing Wallops project. A sizable portion of Wallops effort is devoted to NASA's program of international cooperation in space research. Some 50 countries have sent representatives to Wallops Station over the past few years to observe its operation or to receive training in methods and techniques of launching sounding rockets and satellite payloads. The four-stage Scout, the largest launch vehicle at Wallops, is used in the launch of small scientific satellites, another important element of the Wallops research program. The Owl series of University Explorers, a small scientific satellite project for which Wallops has project management responsibility, is well underway. Responsibility for the management of the Owl series of Explorers provides Wallops with the capability of managing a project from initial design to the ultimate launch, tracking, and data-acquisition phases. In addition to project management responsibility, Wallops conducts a variety of scientific experiments including the recent gravity preference experiment and the "C" band radar system (GEOS–B) experiment.

Wallops Station's achievements during the past calendar year include the first in a series of four gravity preference experiments; the launching of 368 sounding rockets and 220 test rockets; and the participation in a number of international projects highlighted by the joint United States/Japanese launch of 20 meteorological rockets at Wallops Station and assistance with the Italian San Marco II launch off the coast of Africa. The station continues to play an important part in the training of foreign nationals in the techniques of launch operations. Sixteen personnel from France, Germany, Spain, and Japan received training at Wallops Station during the past calendar year and a total of 104 persons from 14 countries visited the installation to observe its operations or seek assistance in establishing a sounding rocket launch facility of their own.

DESCRIPTION

Wallops Station includes three separate areas on the Atlantic coast of Virginia's Eastern Shore: the main base (formerly Chincoteaque Naval Air Station), the Wallops Island launching site, and the Wallops mainland. The administrative offices, the range control center, support shops, and the main telemetry buildings are located on the main base. Wallops Island is about 7 miles southeast of the main base and is connected to the mainland by a causeway and bridge. The island is about 5 miles long and its widest point is only one-half mile. Located on the island are rocket storage buildings, blockhouses, assembly shops, and the launch sites. The Wallops mainland is one-half-mile west of the island and houses the radar and optical tracking sites. An additional Wallops holding is the Eastville tracking site located about 50 miles south of Wallops Station.

Wallops Station, totaling 6,561 acres, consists of 2,313 acres on the main base; 3,000 acres on Wallops Island, 108 acres on the mainland tracking site; and 1,140 acres of unusable marshland. The Eastville tracking site consists of an additional 53 acres of Government-owned property. The total capital investment as of June 30, 1967, including off-site holdings was $100,062,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$5,153,000	$5,301,000	$5,346,000
Travel	136,000	127,000	127,000
Automatic data processing	91,000	75,000	75,000
Facilities services	3,142,000	2,310,000	2,345,000
Technical services	90,000	93,000	89,000
Administrative support	1,117,000	961,000	926,000
Total, fund requirements	9,729,000	8,867,000	8,908,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Space science and applications:			
Physics and astronomy	68	71	69
Launch vehicle procurement	5	4	4
Bioscience	8	10	12
Space applications	5	5	4
Advanced research and technology:			
Space vehicle systems	32	32	34
Space power and electric propulsion systems	2		
Aeronautical vehicles	20	20	22
Tracking and data acquisition	41	43	43
Subtotal, positions by program	181	185	188
2. Support positions:			
Director and staff	6	7	7
Administrative support	207	191	191
Research and development support	124	114	111
Subtotal, support positions	337	312	309
Total, permanent positions	518	497	497

CONSTRUCTION AT WALLOPS

Mr. EVINS. You have three facilities there, as shown by the map on 45, which we won't include. Is there any construction plan for Wallops Station?

Mr. WEBB. Yes; a beach-erosion project of $500,000.

Mr. EVINS. Ordinarily you would get the Corps of Engineers to take care of this for you.

Mr. WEBB. We still have to pay for it. They had a big storm there that did a lot of damage, and we are slowly restoring the area.

Mr. EVINS. You have a lot of blockhouses and facilities there and you have to protect them with a seawall. We will place in the record pages 5–2 and 5–4 of volume III.

(The pages follow:)

CONSTRUCTION OF FACILITIES—FISCAL YEAR 1969 BUDGET ESTIMATES

Installation Summary

NASA installation: Wallops Station.
Cognizant program office for installation: Space science and applications.
Location of installation: Eastern Shore of Virginia.
County: Accomack.
Nearest city: Temperanceville, Va.
Installation mission: The basic mission of the station is to prepare, assemble, and launch scientific experiments, achieve the desired position and velocity in space, track, acquire, and record the data sought. These data are processed and reduced to meaningful form and analyzed.

[In thousands of dollars]

Project line item	Cognizant office	Fiscal year 1959 through current year	Fiscal year 1969 estimate	Future years estimate	Total all years estimate
Beach erosion protection	SSA	25	500	0	525
All other projects		37,819			
Totals		37,844	500		

Beach Erosion Protection

Authorization line item: Wallops Station.
Program office for the project: Office of Space Science and Applications.
Location of project: Wallops Station, Accomack County, Va.
Cognizant NASA installation: Wallops Station.
Type of construction project: Major addition.

Funding:

Fiscal year 1968 and prior years	$25,000
Fiscal year 1969 estimate	500,000
Total funding through fiscal year 1969	525,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				$500,000
Sand fill	Cubic yards	130,000	$1.20	156,000
Earth fill	do	32,000	1.40	45,000
Sheetpiling and wales	Board Foot	360,000	0.63	226,000
Piles	Linear foot	25,500	2.82	72,000
Seeding	Lump sum		1,000.00	1,000
Equipment				
Design				
Fallout shelter (not feasible)				None
Total				500,000

PROJECT PURPOSE

This project will provide an addition to the existing seawall and groin system, in order to stabilize a section of diminishing shoreline and provide a reinforced physical barrier to deleterious storm wave action.

PROJECT DESCRIPTION

The project will extend the existing groin and seawall protection northward from launch pad No. 5. The seawall will be constructed parallel to the beach, running approximately 2,100 feet from the point of connection to the existing steel sheetpiling. Four groins, spaced as 600-foot intervals, are to be projected at right angles to the seawall for a distance of about 400 feet each. The top of the seawall will be at an elevation of 8 feet above mean sea level, at its crest, extending 2,500 feet from its point of connection with the existing fill. Top, or crest elevation of the dyke will be 12 feet above mean sea level. Sand fill will be provided between the groins to prevent downdrift erosion.

Groins and seawall shall be constructed from timber sheet and round piles, timber wales, and bronze bolts. Earth fill will be select sand-clay compacted to maximum density.

PROJECT JUSTIFICATION

The project is based on, and arises out of, a periodic study of the shoreline in the area of the recommended construction. The shoreline is steadily moving inland, and a relatively thin sand dune is the only protection now existing to inundation from severe storm water action.

This project is necessary to: (1) stabilize the shoreline, thereby preventing further encroachment of the sea on real estate which is necessary to the continued mission of the Station; and (2) to provide an extended reinforcing link in an existing protective system, all of which is necessary to the safety of the north launch and assembly area.

Failure to extend the groin and seawall protection provided by this project will risk the cutting of an inlet, by a hurricane or severe northeast storms, from the sea into the Intercoastal Waterway. If this should occur, extensive facilities in the northern half of the island would be isolated. These facilities include camera stations, rocket motor ready storage area, payload checkout, and the dynamic balance test complex. The mission of the station would be impaired greatly pending repair of such storm damage.

Estimated future year funding for this project.—None.

Advanced Research and Technology Installations

Mr. Evins. If there are no questions, we will turn to the next group of facilities, advanced research and technology installations.

These are your advanced facilities.

Ames is in California.

Mr. Webb. Moffett Field, near San Francisco.

Ames Research Center

Mr. Evins. This facility has a major responsibility in the life sciences and space sciences, and the operational responsibility for the NASA Convair 990 aircraft to conduct airborne scientific experiments. In the current and budget years, this installation has flight project management responsibility for the Pioneer and Biosatellite projects. Pioneer provides scientific observations. The Biosatellite project explores the biological effects of the space environment on primates and other earth organisms.

Significant contributions have been made in the design of the Mercury, Gemini, and Apollo spacecraft through efforts at this facility. Then you are making studies on the vertical and short takeoff, V/STOL, aircraft. Will somebody elaborate briefly on what you are doing with the V/STOL and the supersonic transport?

V/STOL AIRCRAFT

Dr. Adams. In the case of the V/STOL, in particular, the Ames Research Center is concerned with short takeoff and landing problems. They are exploring various techniques to improve the lifting characteristics of these types of aircraft in order that they will be able to land safely on short runways. We believe the short takeoff and landing type of aircraft is near the point where it can be a practical system both for military and commercial applications. So we regard this work as very important to both commercial and military users.

Mr. Evins. You are making a significant contribution.

SIMULATOR AT AMES

Mr. Webb. One other thing there that I think is very important for this committee to recognize: At Ames we have developed a great capacity for simulating the problems of man and machine as they work together. For instance, we have a three-degree-of-freedom simulator. We have been able to integrate simulators with the engineering data from large airplanes like the C–5A and actually conduct test flights of those aircraft under certain conditions before the aircraft is ever built, from the input from these simulators. We have been able to assist the Air Force and contractors to make modifications that are not expensive before the airplane is built, but are very expensive if they show up as defects after the airplane has been built. This complex technique of simulation enables us to foresee the problems in a proposed design. You take the precise characteristics of that design and put it into conditions that permit you to judge whether it is ade-

quate or inadequate. This has a very, very important bearing on whether this nation can develop these very large systems like the C–5A.

BIOSCIENCE AT AMES

Mr. EVINS. Mr. Administrator, tell us what you are doing in the life sciences field. You state one of the studies in exobiology is oriented toward the prediction, detection, and study of fossils and life forms.

Dr. NAUGLE. One of the major objectives of the planetary program is to search for extraterrestrial life. That is to see if there are or have been living organisms on Mars or Venus.

Mr. EVINS. What is the National Science Foundation doing in this area?

AUTOMATED BIOLOGICAL LABORATORY

Mr. WEBB. They are financing research. What we are doing is developing equipment. There is work at Ames now on an automatic biological laboratory which, if landed on the surface of a planet, has some capacity to determine whether there is life there.

The work done by the Science Foundation does not generally proceed to this degree of reduction to practice. We move all the way from the theoretical development of a pattern of the atmosphere of a planet like Mars or Jupiter, to the problem of how you get down to that surface and measure whether there is life there. We do not do all this work at Ames. We do it broadly, as the Science Foundation does, by support of researchers elsewhere. But the management of it is here. The concentrated know-how available to the U.S. Government for managing these things is here.

Mr. TALCOTT. Is anyone else in the United States studying this subject?

GRANTS AND CONTRACTS SUPPORT AMES

Mr. WEBB. There are many grants and contracts that support the Ames effort all over the country. For instance. at the University of Rochester, Dr. Wolf Vishniac is developing a system for optical examination of solutions to determine whether life exists in them. Again Ames will have to be prepared with a piece of equipment that will fly on a vehicle to go to Mars.

Mr. JONAS. You mean this is an indirect association with Voyager.

Dr. NAUGLE. This was directly associated with Voyager.

Mr. JONAS. Now, when we are slowing down or marking time on Voyager, you still think it is necessary to go forward with this?

Dr. NAUGLE. Yes, we certainly do, with this preliminary scientific work. One of the primary objectives of the planetary program is to be able to detect life. This is the basic laboratory work that underlies that whole effort.

WORK ON GROUND INCREASED

Mr. WEBB. Mr. Jonas has raised a very important question. As we canceled out Voyager and reverted to a much smaller spacecraft which will have very much less scientific equipment associated with the missions to the planets, we are increasing the amount of work done on the ground and in the theoretical areas, so that when we pick up with the larger, more sophisticated systems at some time in the future,

we will be able to make better decisions as to what should be done, and what can be done in planetary exploration. Our problem of decisions in the future is directly related to the question of how long it will take, how much money it will cost, and what will you get once you have done the job. So if anything, we are increasing the amount of work that will permit us to make those decisions on the basis of better information, and a better technology than we could have flown in the Voyager series.

AMES STATISTICS

Mr. EVINS. Gentlemen, at the Ames Center near San Francisco you have about 365 acres. Certain other facilities are operated jointly by NASA and the Navy. The total capital investment is $210,781,000. Your costs go up from $33,563,000 to $33,975,000.

Your personnel remains constant, 2,092.

We will place in the record pages 2–50, 2–51, and 2–52 and the summary of personnel staffing at 2–53.

(The pages follow:)

ADMINISTRATIVE OPERATIONS, FISCAL YEAR 1969 ESTIMATES

AMES RESEARCH CENTER

Mission

Ames Research Center has a major research responsibility in the life sciences and space sciences, a flight project management responsibility, and the operational responsibility for the NASA Convair 990 aircraft to conduct airborne scientific experiments in addition to the traditional research mission in the physical sciences. In the current and budget years, this installation has flight project management responsibility for the Pioneer and biosatellite projects. Pioneer provides scientific observations of phenomena in interplanetary space from an unmanned spacecraft, and the biosatellite project explores the biological effects of the space environment on primates and other earth organisms.

Research in the physical sciences includes studies in atmosphere entry and environmental physics, guidance and control systems, and aeronautics. The work in entry and environmental physics includes basic studies of the physics of high-temperature gases, the stability, control, and performance of a wide range of spacecraft configurations, and of materials and structures for spacecraft. In the area of gas physics, particular emphasis is placed on problems associated with flight into earth and other planetary atmospheres. Through this effort, significant contributions have been made to the design of the Mercury, Gemini, and Apollo spacecraft, the design of Mars and Venus entry vehicles, and the design of ballistic missiles.

The work in guidance and control systems is broad in nature and is applicable to manned and unmanned spacecraft, as well as aircraft. Current emphasis in guidance systems is directed mainly at current and follow-on manned missions. This includes an intensive theoretical and experimental effort in the areas of midcourse navigation and terminal guidance with a smaller effort directed at studies involving lunar approach, lunar landing, and rendezvous. The research in control systems is directed at examining various techniques applicable to unmaned satellites and probes and techniques applicable to vertical and short takeoff (V/STOL) aircraft, the supersonic transport, and manned spacecraft.

The research program in aeronautics is directed at fundamental studies in aerodynamics, propulsion, and operating problems associated with supersonic aircraft with particular emphasis on the supersonic transport, a wide variety of V/STOL vehicles, and hypersonic research aircraft. This includes studies of piloting problems with numerous fixed-base, moving-base, and flight simulators.

Research in the space sciences includes studies in the field of solar physics, planetary environments, and geophysics. This includes ground-based and sounding rocket experiments as well as experiments requiring specialized instruments aboard satellites and space probes. The work covers studies pertaining to magnetic fields and plasmas in space, studies to determine the composition and structuring of planets and of planetary and stellar atmospheres, and studies of

cratering mechanics in natural materials to aid in understanding the structure of lunar surfaces.

Research in the life sciences is conducted in three major areas: (1) Basic research in the physiological and behavioral sciences concerned with obtaining a basic understanding of the effects of terrestrial and extraterrestrial environments and of space flight stresses upon living organisms, including man; (2) studies in exobiology oriented toward the prediction, detection, and study of extraterrestrial fossils, chemicals, and life forms; and (3) research in long-term advanced life support systems and in the human factors aspects of the relationships between man and the machines which will transport and support him during lunar and planetary exploration.

Description

The Ames Research Center was established in 1940, and is located at the Southern end of San Francisco Bay on land contiguous to the U.S. Naval Air Station, Moffett Field, Calif. Its physical plant comprises many specialized facilities for aerospace research in the traditional physical sciences as well as the space sciences and life sciences, all of which are included in the mission of the Center. These include conventional wind tunnels, entry-heating simulators, and free-flight ballistic test facilities capable of conducting tests at speeds up to and above Earth-escape speed as well as laboratories equipped to study solar and geophysical phenomena, life synthesis, life detection, and life environmental factors. The Ames Research Center occupies about 365 acres of land. Certain other facilities, such as the utilities and airfield runways, are used jointly by NASA and the Navy. The total capital investment of the Ames Research Center, including work in progress and contractor-held facilities, as of June 30, 1967, is $210,781,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$25,923,000	$26,943,000	$27,372,000
Travel	841,000	793,000	793,000
Automatic data processing	1,819,000	1,544,000	1,544,000
Facilities services	3,932,000	3,191,000	3,174,000
Technical services	205,000	70,000	70,000
Administrative support	1,104,000	1,022,000	1,022,000
Total, fund requirements	33,824,000	33,563,000	33,975,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Gemini	1		
Apollo	6	7	7
Space science and applications:			
Physics and astronomy	136	126	126
Lunar and planetary	40	40	41
Bioscience	216	216	216
Space applications	9	10	8
Advanced research and technology:			
Basic research	285	271	271
Space vehicle systems	288	251	251
Electronics systems	158	144	143
Human factor systems	181	181	181
Chemical propulsion	4	6	8
Aeronautical vehicles	399	413	413
Subtotal, positions by program	1,723	1,665	1,665
2. Support positions:			
Director and staff	50	48	48
Administrative support	321	310	310
Research and development support	79	69	69
Subtotal, support positions	450	427	427
Total, permanent positions	2,173	2,092	2,092

CONSTRUCTION AT AMES

Mr. EVINS. At Ames you propose construction of $386,000 for water supply and distribution system. Tell us why this is needed.

Dr. ADAMS. Mr. Chairman, we have an old water supply system there. The pipes are leaking frequently, and we feel we just cannot delay the replacement.

Mr. EVINS. How long ago was this built?

Dr. ADAMS. It is 17 years old, this water supply system.

SCREENING OF CONSTRUCTION REQUESTS

Mr. EVINS. Who screens these requests for construction items in your organization?

Mr. WEBB. They are screened by our scientific and technical people for the need.

Then they move to the administrative side. Mr. Lilly and Mr. Finger keep a very sharp watch on these construction items. Do you want to explain the process by which we make the decision?

Mr. LILLY. Yes, sir.

Mr. EVINS. Each facility wants all the construction possible and they request many items. How do you weed out the nonessentials from the essential ones?

GROUND RULES FOR CONSTRUCTION

Mr. LILLY. Mr. Evins, first, as Mr. Webb indicated, these are screened by the technical personnel under guidelines which we give them in terms of what we can afford or what we feel should be built. For instance, in this fiscal year we laid down ground rules that there would be no administrative space and that we would limit our funds to those items which were absolutely required for carrying out a specific mission. Even under these guidelines we had over $100 million worth of facilities proposed.

These were reviewed by a board set up in the NASA Headquarters.

Mr. EVINS. Practical-minded men look over these requests. You had over $100 million in project requests and you are recommending about $45 million.

Mr. LILLY. That is correct.

Dr. ADAMS. I would like to mention here, Mr. Chairman, that there are no other facility requests in all of the other research centers. This was the only construction item of the five research centers.

CONSTRUCTION JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record CF–1–2 through 1–4.

(The pages follow:)

INSTALLATION SUMMARY, CONSTRUCTION OF FACILITIES, FISCAL YEAR 1969 BUDGET ESTIMATES

[Dollars in thousands]

NASA installation: Ames Research Center.
Cognizant program office for installation: Advanced Research and Technology.
Location of installation: Moffett Field, Calif.
County: Santa Clara.
Nearest City: Mountain View, Calif.

Installation mission: Laboratory research in aerodynamics, thermodynamics, materials, structures, guidance and control, space sciences, environmental biology, life detection, life synthesis, human factors, and fundamental physics and chemistry; project management of unmanned space flight projects (scientific probes and satellites); development of scientific experiment payloads for space flight projects managed at Ames and elsewhere.

Project line item	Cognizant office	Fiscal year 1959 through current year	Fiscal year 1969 estimated	Future years estimated	Total all years estimated
Water supply and distribution system	ART	18	386		404
All other projects		53,862			
Total		53,880	386		

Construction of Facilities, Fiscal Year 1969 Estimates

WATER SUPPLY AND DISTRIBUTION SYSTEM

Authorization line item: Ames Research Center.
Program office for the project: Office of Advanced Research and Technology.
Location of project: Moffett Field, Santa Clara County, Calif.
Cognizant NASA installation: Ames Research Center.
Type of construction project: New.

Funding:

Fiscal year 1968 and prior years	$18,000
Fiscal year 1969 estimate	386,000
Total funding through fiscal year 1969	404,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				$386,000
Utilities	Lump sum		$386,000	386,000
Equipment				
Design				
Fallout shelter (not feasible)				None
Total				386,000

PROJECT PURPOSE

To make water supply and distribution modifications and improvements essential to orderly, efficient, and safe operation of the Center. The proposed additional main water supply and modifications to the distribution system will provide the Center with a reliable source of water and increase the pressure flow to an adequate level throughout the Center.

PROJECT DESCRIPTION

The proposed addition and modification to the water system consists of a second main water supply and improvement of the existing water distribution system. The project will involve running an 18-inch pipeline from the San Francisco Water Co.'s transmission mains approximately 4,000 feet to an existing watermeter pit at the main entrance to Moffett Field and then distributing the water throughout the Center with 5,000 feet of 18-inch pipe and 1,600 feet of 12-inch pipe. The existing 18-inch water supply from Moffett Field will then be lined with cement to provide a reliable secondary source.

PROJECT JUSTIFICATION

The proposed modifications are required to provide the Center with a reliable source of water. Further expansion of Center facilities will make the need for

these improvements more critical. The proposed modification will be designed to allow Center expansion without sever penalty to future facility construction budgets. It is essential that an adequate water supply system be constructed to insure that water is available at each research facility at all times. An adequate and continuous supply of water is particularly important for fire protection and for the operation of large wind tunnels and noninterruptible life science experiments; e.g., continuous operating centrifuges.

Water is presently supplied to the Naval Air Station, Ames, and Moffett Homes Navy dependents' housing) by an 18-inch diameter 3/16-inch wall steel pipe installed 17 years ago. It runs along Tyrella Avenue from the Hetch Hetchy lines, across Bayshore, and along the Moffett Field fence line to a meterpit located near the main gate. About 7 years ago, a major leak under Bayshore Freeway caused a shutdown of this line for approximately 3 months. A 10-inch backup line was put into service and by carefully monitoring water storage and usage the Center was able to continue operations. A similar occurrence today would shut down the Center for the duration of the line repair. The 10-inch line is now useless since the joints leak due to failure of the joint compounds. Repair is impossible without complete excavation of the line. Installations such as Ames, and the Naval Air Station, should have two reliable supplies of water since an accidental interruption to any one service line could occur at any time.

Mr. TALCOTT. Is there a joint application for the water improvement system with the Navy at Moffett? Do they have the same problem with water at Moffett that you have at Ames?

Mr. MYERS. No, sir; there are separate systems at Moffett. They had a system tied in further down the pipeline, when it was originally installed 17 years ago. It is impossible to tap into their system. They have the same water pressure problems we have. We do not have enough pressure to feed our fire hydrants and we had to build a tank.

ELECTRONICS RESEARCH CENTER

Mr. EVINS. Another is Electronics Research Center in Boston, Mass. This is your newest facility. It increases the Nation's capability in space in two principal ways. First, the Center organizes, manages, and conducts a comprehensive program of basic and applied aerospace electronics research.

Second, the Center provides a focal point for national aerospace electronics research, coordinating nationwide research efforts, and sponsoring electronics research conducted by industry, universities, and private institutions.

CAPITAL INVESTMENT

You list on pages 2–57 and 2–58 some of the research underway. You have 226 acres there, and the capital investment is $11,577,000. You have some construction underway. The foundation for the high-rise laboratory has been completed, and construction has begun on the facility. This laboratory is due for completion in October 1969; the auditorium in July 1969; and the Center building in May 1969. Award of the contract for construction of the Space Guidance Laboratory and Optics Laboratory is planned for 1968. Tell us about this new contract.

GUIDANCE AND OPTICS LABORATORIES

Dr. ADAMS. This new contract, Mr. Chairman—we have proposals in right now—would allow us to initiate hopefully this month construction on two buildings, the Guidance and Optics Laboratories.

The Guidance Laboratory is for research relating to all types of space travel as well as aeronautical investigations. For example, work is underway on advanced systems for improving the guidance of aircraft. The Optics Laboratory is related to space optics, looking toward improved telescopes in space that would enable improved astronomical observations, for example.

Mr. EVINS. On AO 2–59, personnel costs go up from $7,407,000 to $12,428,000 in 2 years. Travel is increased. Every item is increased except technical services. The total funding requirement for the Electronics Center is $19,079,000, which is $3,612,000 over last year. Who wants to talk more about justifying the 150 new jobs?

Dr. ADAMS. This is the only research center that is growing, Mr. Chairman. The other research centers are actually decreasing. I might just mention in summary form some of the total numbers. The other research centers have reduced personnel in fiscal 1967 and 1968, a total of almost 800 people, while the Electronics Research Center is growing, as you indicated.

This growth we feel is of vital importance to the future of the NASA program. Today the electronic systems that are purchased by the Agency are somewhat below 50 percent of the total research and development budget. We foresee that percentage to increase to greater than 50 percent in the future as new systems get more complex, more sophisticated, and more dependent upon electronics.

The growth of the Center has not been rapid, in my opinion. We would like to have grown more rapidly, but budgetary limitations have forced us to reduce our plans.

CONTRACT BIDS HIGH

Mr. JONAS. If you will yield right there, I do not think that is exactly true. The thing that has caused you to not go as far as you planned is your failure to get the building constructed within the limits of your estimates.

You are now in rented space. You lost a full year by not having a proper design for the building. You built a foundation before you had your design for the building. You had to throw out all the bids. They were too high.

I don't think you can attribute all of this, if there has been any slow growth which I do not agree, to budgetary limitations but to administrative mistakes.

Dr. ADAMS. Certainly the construction was delayed due to a number of problems. The most recent problem we had last year was that the bids came in about 30 percent in excess of the Government estimate and the architect-engineer design contract estimate. As a consequence we went through a redesign and delayed the construction. We now have that construction underway.

Mr. JONAS. Did you make your design to fit the foundation?

Dr. ADAMS. We are using the majority of that foundation. We are not using a part of it.

Mr. JONAS. What will happen to it? Will it have to be thrown out?

Dr. ADAMS. That part of the foundation not used will stay in place.

Mr. EVINS. Just consider that an earlier contractual mistake.

Mr. MYERS. About $80,000 out of the $1,230,000 for the foundation construction will not be usable. Well over 90 percent of the foundation is usable in the current construction. There is one corner that we were not able to use.

ELECTRONICS CAPABILITIES OF OTHER CENTERS

Mr. JONAS. As I recall, when you first justified this Center it was agreed by both sides of the table that you had a capability in this field at every one of your centers. My recollection is that you wanted to consolidate that activity in one center. Has that been done, or do you still maintain electronics research capabilities in your separate centers?

Dr. ADAMS. We do have electronics capability in the other centers, but that capability is primarily that which is needed for those other centers to carry out their own responsibilities. We have not increased; in fact, we have had some decrease in the personnel assigned to electronics research at the other centers. The only one that is increasing is the Electronics Research Center. So they are providing a total integration and focal point, and a primary contact with the industry and universities.

Mr. JONAS. Can we have for the record a listing of reductions in personnel engaged in electronics research at the separate centers?

Dr. ADAMS. We can provide that for the record. I do not want to mislead you, the decrease has not been a large decrease.

(The requested information follows:)

The direct electronics positions at the various centers are as follows:

Center	Fiscal year		
	1967	1968	1969
ERC	245	308	385
ARC	158	144	143
FRC	25	20	20
LaRC	441	405	380
LeRC	61	60	60
MSC	4	4	4
MSFC	95	90	93
GSFC	71	60	72

The buildup of capability at the Electronics Research Center is evident. In looking over the position figures of the other centers, however, it is important to remember that many factors enter into the electronic position needs of these centers. For example, missions assigned to a center such as the successfully concluded lunar orbiter program at Langley causes a shift in the electronics positions. Electronics is closely coupled to other technologies as, for example, power conditioning of space power systems at Lewis and bioinstrumentation for human factors at several centers. Electronics is also inherent in all types of research from computers for theoretical analyses to instruments for wind tunnels and flight exeriments. For these reasons, the number of positions in electronics and their year-to-year fluctuations cannot be linked one-to-one to our buildup of basic electronics capability at the Electronics Research Center.

Let me expand further on the role of electronics in NASA's total space and aeronautical activities. As our programs and activities increase in detail and complexity, we become more dependent on electronics technology. A recent survey of the agency's research and development expenditures indicated that in fiscal year 1962, 27 percent of these funds were spent for the development and procurement of electronic systems and components. In fiscal year 1968, this expenditure has reached 40 percent of the total and will grow to approximately 50 percent by

fiscal year 1973. About 70 percent of our spacecraft costs, 22 percent of the launch vehicles, 85 percent of the tracking networks, and 33 percent of the launch facility costs are for electronic systems and their operations. To insure proper and expeditious management of these resources, we must maintain a highly trained and competent staff of scientists and engineers at flight and research centers within the agency. This staff must be able to conduct mission planning, to perform research and development in-house, to operate our existing facilities, networks and systems, and most importantly, to selectively employ the broad talents and imaginative minds of the academic and industrial communities in the research and development of electronic systems for useful applications to aeronautics and space technology.

The Electronics and Control Division in OART has the responsibility for directing the electronics research program throughout the agency. A major factor in this assignment is to maintain a program balance, responsive to the mission and project needs of the various centers on one hand and on the other hand, alert to the potential and capability of electronics research in such areas as new materials, energy sources, instrumentation, timing, and data processing. The program concept is analogous to propulsion research at the Lewis Research Center and propulsion developments carried out, for example, under the Marshall Space Flight Center.

In fiscal year 1964 we proposed, and Congress approved, the formation of an Electronics Research Center to provide the agency with a needed increase in electronics research competence. The objective of the new center was to establish a nucleus of research experts which would complement the capabilities of the existing centers to conduct their assigned missions and operations. It was a studied management decision to maintain electronics competence at the existing centers; however, as program and mission assignments change the center complement will adjust, for example, the direct electronic program complement at LaRC has been reduced by 36 positions in the current fiscal year.

The new center was to be staffed principally by new talent from outside the agency, this has continued to be our policy since the first cadre was assigned in September 1964. There are notable exceptions, principally in the management level, selected on the basis of agency experience and professional interests. From an initial group of 30, the center has grown to its present complement of 755 personnel. Of this total, 360 are research professionals. 59 percent of these professionals have joined NASA from industry, 22 percent from academic institutions, 8 percent from other Federal agencies, and 11 percent from other NASA centers.

Of the 11 percent, professional from other NASA centers, one is the Center director, four are assistant directors, one is chief of the construction projects office, two are classed as senior scientists, one is a deputy laboratory chief. two are branch chiefs in the technical laboratories and the remaining 27 are staff scientists in the various technical directorates. Our goal is to provide a total center staff of 2100, consisting of 900 scientists and engineers, 700 technicians, and 500 supporting administrative personnel. The requested increase of 150 in fiscal year 1969 will bring the total onboard personnel to 966 by June 30, 1969. Today the center is carrying out an active research program in laboratories established in the rental quarters in Cambridge, Mass. The plant investment was valued at $11.6 million as of June 30, 1967, of which $7.3 million is capital equipment being used by research people in carrying tasks assigned to ERC, $0.8 million is titled real estate, and $3.5 million is the capitalized value of construction completed or under contract. The total center R. & D. authorization is $26.3 million in fiscal year 1968 and the program consists of 800 work units representing efforts in industry, universities, Government laboratories and in-house at ERC.

The need for this new center and its corresponding increase in electronics competence is best substantiated by the important new areas of research in which the center and its staff are playing leading roles. Some examples are microelectronics, particularly the development of large-scale integrated circuits for aerospace applications; new data processing techniques including holography and optical data storage and retrieval systems; laser research for space applications; optical technology for space astronomy; and research on advanced aircraft electronics including techniques for collision avoidance, detection of clear air turbulence, advanced communication and navigation systems for high speed commercial aircraft and flight control systems for vertical and short take off and landing aircraft.

In summary, electronics is a young and vigorous technology characterized by new discoveries such as the transistor and laser, and rapidly evolving changes from vacuum tubes and discrete parts to solid state components and integrated circuits leading to sophisticated instrumentations, data processing, communications, and control concepts for the future. To establish and maintain the "leading edge" competence necessary for the technical leadership in this field, the agency must develop a capability to bridge the basic research and development activities of the academic and industrial communities to the operational and support activities of the centers with assigned mission responsibilities. That bridging function is the role of the Electronics Research Center.

QUESTION OF CONSOLIDATION

Mr. JONAS. That is what worries me. I do not remember whether you were here or not. That was back when Dr. Dryden was the first man to justify this center. I recall very well a colloquy with him and others that there was going to be a consolidation. You are now spending $19 million a year on operations of a new center. You spent $11 million on construction. That is not going to be all of it. We do not see any evidence of any consolidation.

Dr. ADAMS. Let me say, Mr. Jonas, that this whole area of electronics is a growing area. I do not see how we could advance the important work in electronics without increasing the budget. What we are doing is holding the line at the other centers. And the increase is showing up only at ERC. Let me give you an example of the powerful impact of electronics. There was a recent article published which cited that today's aircraft and space vehicles rely very heavily on transistors. If you compare or if you assumed that today's modern systems had to use the old tubes instead of the modern transistor then there would be little or no room for weight or payload.

That is looking at the past and looking at the present situation. If you project forward we foresee advances in these new integrated circuits, of providing big increases in capability over the transistor comparable to the big step the transistor took over the tube. So the point is simply as we look toward more complex, more sophisticated aircraft and space vehicles, electronics are going to play an increasing role in their ability to carry out their missions. The reliability and operation of these systems will be more and more dependent on advanced electronics.

BUILDUP VERSUS REDUCTIONS ELSEWHERE

Mr. JONAS. We do not really need to be sold on the value of electronics research. My problem is to justify a continued substantially higher each year buildup of operating costs at the Center which I thought was going to take care of your electronics research agency-wise, and we would have a comparable reduction in your electronics research and activities at the centers.

You said you had about 800 people in the other centers, but they are not electronics scientists.

Dr. ADAMS. Some of them are.

Mr. JONAS. How many did you transfer to Cambridge?

Dr. ADAMS. I do not have those numbers here, but will provide them for the record.

(The requested information follows:)

Eleven percent of the direct professionals or 38 people are transfers to the Electronics Research Center from other centers. Of these, 11 occupy key positions and the remaining 27 are staff scientists.

Mr. JONAS. Of the 150 new personnel you propose, are they to be transferred from other centers, or are they to be new hires?

Dr. ADAMS. It can be some of both.

Mr. JONAS. We would like to have a little more information on that.

Dr. ADAMS. I cannot really predict of that 150 how many are going to be transferred.

BREAKDOWN OF PERSONNEL INCREASE

Mr. JONAS. You had to know that when you made up this budget estimate or else you are just guessing. Don't you have a breakdown of who the 150 will be? You do not show whether they are scientists or administrators or who they are.

Dr. Adams. Let me summarize the makeup.

Mr. EVINS. Basic research goes from 91 to 121. Space systems, 4 to 5. Electronics systems, 308 to 385. Space propulsion, 15 to 19. In the support positions for your staff, you want one more. Administrative support, 205 to 221. Research support, 96 to 103. Overall it is 150 jobs. We will place in the record pages 2–57 through 2–60.

(The pages follow:)

ADMINISTRATIVE OPERATIONS, FISCAL YEAR 1969 ESTIMATES

ELECTRONICS RESEARCH CENTER

Mission

The mission of the Electronics Research Center is to increase the Nation's capability in space by providing the knowledge and advanced technology needed to improve performance and reliability of space and aeronautical electronic systems and components. The Center meets this responsibility in two principal ways:

First, the Center organizes, manages, and conducts a comprehensive program of basic and applied aerospace electronics research to: (*a*) investigate concepts and techniques that will provide the technological foundation for the development of electronic equipment of reduced weight, size, power drain, and complexity, able to operate for long periods of time in the temperature, radiation, vacuum, and other conditions of an aerospace flight environment; (*b*) investigate concepts and techniques, establish performance characteristics, test procedures, and specifications for aerospace electronic components and techniques that will make aerospace electronics equipment inherently more reliable; and (*c*) devise new electronic concepts and techniques and prove their feasibility both analytically and experimentally, leading to aerospace electronic equipment with performance characteristics far beyond those of today.

Second, the Center provides a focal point for national aerospace electronics research, coordinating nationwide research efforts and sponsoring electronics research conducted by industry, universities, and private institutions. In this capacity, the Center: (*a*) responds to the needs of specific aerospace programs and projects for new electronic techniques, concepts, and devices, and helps shape future electronics research to resolve anticipated problems in these programs; (*b*) distributes knowledge about basic and applied research on aerospace electronics within NASA and also to industry, universities, and other members of the

scientific and engineering community; and (*c*) provides to NASA programs and projects aerospace electronic scientists and engineers who are fully knowledgeable in the electronics state of the art.

Electronics research being managed and conducted by the Center during fiscal year 1968 and fiscal year 1969 is largely contracted with industry and universities and is focused in the following areas:

1. Aerospace electronics materials and components.
2. Guidance and navigation of space vehicles, aircraft, and the supporting ground-based equipment.
3. Space vehicle and aircraft control, stabilization, and information systems.
4. Electronic system simulation, analysis, evaluation, and integration in the field sof guidance, control, navigation, tracking, communication, and instrumentation.
5. Electrical and electronic power conditioning and distribution.
6. Bioelectronics.
7. Space and ground-based computers, computing systems, and instrumentation technology.
8. Solid-state physics, microwave propagation, microwave communications, and transmitting and receiving phenomena.
9. Optical communications.
10. Astrophysical measurements.

An inhouse research effort is being conducted by the Center staff on those tasks offering great promise for aerospace electronics technology and on those problems requiring firsthand experience on the part of the Center personnel in order to contract, monitor, and evaluate related research with industry and universities.

Description

The Electronics Research Center is being constructed on a tract in the Kendall Square area of Cambridge, Mass. The site, 1½ miles west of the center of Boston, Mass., is immediately north of the Massachusetts Institute of Technology and 1½ miles from Harvard University. The tract is bounded on the north by Binney Street, on the south by Broadway, on the east by Third Street, and on the west by the New York Central Railroad. In addition to the Center site, an auxiliary site will be required for the field tests and research that cannot be conducted at the main site. The total area to be occupied at the Kendall Square site in Cambridge is 226 acres. The total capital investment of the Electronics Research Center, including work in progress and contractor-held facilities, as of June 30, 1967, is $11,577,000.

Construction of foundations for the high-rise laboratory, auditorium, and the center support structures has been completed, and construction of the structures themselves has begun and is scheduled for completion as follows:

High-rise laboratory: October 1969.
Auditorium and office addition: July 1969.
Center service building: May 1969.

Award of the contract for construction of the Space Guidance Laboratory and Optics Laboratory is planned during fiscal year 1968.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$7,407,000	$10,126,000	$12,428,000
Travel	310,000	440,000	485,000
Automatic data processing	1,031,000	1,273,000	1,366,000
Facilities services	1,971,000	2,007,000	2,943,000
Technical services	554,000	704,000	636,000
Administrative support	946,000	917,000	1,221,000
Total, fund requirements	12,219,000	15,467,000	19,079,000

PERSONNEL

	1967	1968	16969
1. Permanent positions by program:			
Manned space flight: Apollo applications		2	3
Space science and applications:			
Physics and astronomy	1	4	5
Lunar and planetary	1	2	3
Launch vehicle development	16		
Launch vehicle procurement		24	29
Space applications	13	18	23
Advanced research and technology:			
Basic research	94	91	121
Space vehicle systems	6	4	5
Electronics systems	245	308	385
Human factor systems	16	20	21
Space power and electric propulsion systems	7	15	19
Aeronautical vehicles	2		
Subtotal, positions by program	401	488	614
2. Support positions:			
Director and staff	26	27	28
Administrative support	186	205	221
Research and development support	87	96	103
Subtotal, support positions	299	328	352
Total, permanent positions	700	816	966

(Discussion off the record.)

Mr. EVINS. On the record.

Mr. WEBB. Mr. Jonas, we still have a very strong need to identify those people most likely to advance the state of the art by bringing the theoretically possible into some practical apparatus and means of utilization. Next summer Dr. Sam Silver, who has been the head of the Space Science Center at Berkeley, has agreed to visit a number of the men who appear to be most likely to have research under way that would put us forward in this field. It is so important that we are prepared to have him go to those places where those men are now at work, because he has had thorough experience in the requirement for the most modern electronics to fly on spacecraft.

Mr. JONAS. Let me say this: I understand the difference between applied electronics and research. But we did not entirely neglect research in the field of electronics until we started moving people to Cambridge. We were doing some of that in the centers and elsewhere. I would like to know how much and to what extent there has been a consolidation of whether we are just superimposing a new research center and maintaining all of the other activity in that field.

FOCUS ON COMMON PROBLEMS

Dr. ADAMS. Permit me to add a couple more points here to illustrate the kind of integrating role that the Electronics Research Center plays. As an illustration, we have found a number of common problems that exist in NASA programs as well as other national programs. The Electronics Research Center will then focus on these common problems in order to help everyone who is having them. For example, we have found that one of the limiting factors in advanced systems today is in the proper utilization of computers, the problem of more effective information transfer between the computer itself and other system elements.

So we are putting increased emphasis here to try to understand these problems better. Another example is common problems associated with switching mechanisms causing failures of a number of systems. So ERC plans to conduct an effort to try to better understand and solve those switching problems. These are two illustrations, and there are others.

So they can identfy and conduct research on common problems that are affecting everyone, not only in NASA, but problems the other agencies are having as well.

TYPES OF EMPLOYEES INVOLVED

Let me say a little more about these 150 people. I cannot tell you right now how many will come from other NASA centers, or how many from outside, but let me say a little about the types of people and what they are going to do. We are increasing significantly our effort in aeronautical electronics, and we have planned to hire 67 people in this area. Let me mention an important example.

We have in this particular case a man who transferred from Houston. He had much experience in the Mercury, Gemini, and Apollo systems. He is now a director of one of the divisions at the Electronics Center. He is initiating a program utilizing the electronics used on the Gemini system in order to try to solve the problem of all weather landing of vertical and short take-off systems. We feel that this is a very important application of space electronics to the aircraft field. We will hire 30 people to give more emphasis on that program.

CIVIL SERVICE GRADES OF SCIENTISTS

Mr. JONAS. Frankly, I cannot see how you can do all of this very technical research with the type personnel you have up there.

I notice out of the 966 permanent employees, 722 of them are under GS–14. This means you have a majority of your people who are clerical.

Mr. MYERS. No, sir.

Mr. JONAS. You cannot hire much of a scientist at a GS–13, can you?

Mr. MYERS. Yes, sir. We have scientists all the way from nine up through GS–15. There is a distribution through the grade levels. It is true that the lower graded scientists are usually new college hires or with shorter experience than the more qualified people, but we have a mix of the various grades.

Mr. JONAS. You say all other GS grades, that is 13 down, 722 of your people?

Mr. MYERS. Yes, sir.

Mr. JONAS. I think you are over-heavy on clerical personnel at the expense of your scientific effort.

CLERICAL PERSONNEL

Mr. MYERS. No, sir. Of the total complement the clerical personnel represents only about 20 percent of the complement; that is the clerical and administrative.

The rest are scientists and technical support people.

Mr. JONAS. I did not think you could get any qualified scientist at 13.

Mr. MYERS. We have now about $11 million worth of equipment at ERC where we are conducting research both in-house and under con-

Mr. WEBB. I think you will find that in this kind of a situation we have.

Mr. WEBB. I think you will find, that in this kind of a situation we build up our staff by hiring people right out of college and then let them gain the experience and move on into more advanced work. A good many will come at these lower grades under those conditions.

Mr. MYERS. In fact at ERC we have a larger percentage of Ph. D.'s than any other NASA center. We are trying to get some of the newer engineers and new blood in to assist these Ph. D.'s in getting on with the work.

PH. D.'S AT GS–13 AND GS–14

Mr. JONAS. You only have 12 supergrades and 10 excepted personnel.

Mr. MYERS. Yes, sir. Some of the Ph. D.'s we are paying GS–13 and GS–14 salaries.

Mr. JONAS. Ph. D.'s?

Mr. MYERS. Yes, sir.

Mr. WEBB. We are able to present them because of the interest of the work they are doing. The real capability to give you an automatic landing in a helicopter, for instance, that kind of a problem, attracts the best brains.

Mr. JONAS. I am amazed you can get them.

Mr. TALCOTT. Isn't it true that the electronics industry and the universities and the military services are all enlarging very dramatically their electronics research? Is it possible that we could cooperate with them more, or make better use of their research activities and what they learn?

COOPERATION WITH MILITARY

Mr. WEBB. We are fully cooperating with them.

Dr. Adams may want to tell you how we do plan our programs together. We are out in the area of theoretical research here that serves them and us. They are just as interested in this automatic landing capability for vertical and short takeoff airplanes as anybody in the world could be. Yet there are certain problems that must be solved at the theoretical level and then brought into practice. We plan this program very carefully together.

Dr. ADAMS. Yes; that is very true. In this example of the vertical takeoff and landing system, we have a cooperative program with the Air Force. They are going to provide us an aircraft with which we will carry out flight research, using these new concepts that the Electronic Research Center is coming up with. This is a well-coordinated program. We have a committee working under the Aeronautics and Astronautics Coordinating Board that reviews each other's work plans each year.

In addition, we have advisory committees which have representatives from the Air Force and other DOD agencies, as well as industry, to go over and review our program. Consequently, we have excellent coordination.

V/STOL AIRCRAFT FOR TESTING

Mr. MINSHALL. How many vertical takeoff and landing vehicles do you have for testing at the present time?

Dr. ADAMS. We have right now several aircraft that have been assigned to us from the DOD.

Mr. MINSHALL. From what companies?

Dr. ADAMS. We have the XC–142 that I believe was built by Chance-Vought. We have a C–8 Buffalo that was built by a company in Canada, and we will very soon be getting an X–B–48 that I believe was built by Lockheed.

(Information subsequently supplied for the record follows:)

NASA now has 10 V/STOL aircraft either being used for flight research or to be used in the very near future. The Air Force has assigned NASA the X–14A jet VTOL (built by Bell Aerosystems), the XC–142 tilt-wing VTOL (built by LTV), the P–1127 vectored jet VTOL (built by Hawker-Siddeley), and the C–8A STOL transport (built by De Havilland of Canada). The Navy has recently assigned NASA an OV–10A "COIN" STOL aircraft (built by GE nad Ryan), the YHC–1A helicopter (built by Vertol), and the OH–4A helicopter (built by Bell Aerosystems). The NASA has purchased a Bell 204B helicopter and a Lockheed XH–51N helicopter.

PROBLEMS OF V/STOL DEVELOPMENT

Mr. MINSHALL. Do you think it is imperative that we go ahead with all this electronic gear when they have not developed a good V/STOL yet?

Dr. ADAMS. One of the reasons they are not adequately developed is because the problem of controlling them and landing safely has not be solved.

Mr. MINSHALL. Even in good weather?

Dr. ADAMS. Even in good weather. I believe almost every V/STOL aircraft that has been built has had an accident. One of the reasons is the problem of control of these aircraft in going from the forward flight condition through the transition to the landing condition, and we are focusing on that problem; first, of course, for operations under good weather conditions and eventually, hopefully, making them operable under all-weather conditions.

Mr. WEBB. And, Mr. Minshall, the terrible fuel penalty you pay for any time required in the hover mode means a very accurate control system can reduce the amount of fuel you have to carry. Therefore you can increase your payload. So you have the operating problems as well as this theoretical problem of control.

OTHER ELECTRONICS FOR AIRCRAFT

Mr. MINSHALL. Let me ask one other question, if I may, please, Mr. Webb. What other electronics gear are you developing for present-day aircraft?

Mr. WEBB. We are working very actively with the stabilized platforms and many types of inertial and other systems, to give us much more efficient control.

We are also working with augmentation problems of the smaller existing, say, private-pilot type of aircraft. Dr. Adams may want to say more about that.

ASSISTANCE TO GENERAL AVIATION

Dr. ADAMS. Starting with the private aircraft, which Mr. Webb mentioned—I think we discussed that a little bit last year—we have found a number of deficiencies with the smaller general-aviation aircraft. We are working on electronic aids to make them easier to fly and operate.

Mr. WEBB. Particularly under marginal conditions when the pilot gets in trouble, because his job of flying and navigating and getting into an airport that is almost closed can become insuperable.

Mr. MINSHALL. Is this for navigation or for stabilizing the aircraft?

Mr. WEBB. Stabilizing—making it easier for him to control the airplane so he can then devote most of his attention to the problems of navigation.

Dr. ADAMS. In some aircraft a pilot can get way off course due to the difficulty of handling his aircraft and trying to navigate simultaneously in bad weather conditions. So, we are working on systems to ease his workload.

Mr. MINSHALL. Do you mean something like a cheap autopilot?

STABILITY AUGMENTATION SYSTEM

Dr. ADAMS. We call it a stability augmentation system that will assist to maintain the airplane flying straight and level as he hits gusts or——

Mr. MINSHALL. I know FAA is, and maybe you are working in connection with them—for example, to get a less expensive transponder for general aviation aircraft.

COLLISION AVOIDANCE

Dr. ADAMS. We are doing that work, and are coordinating with FAA, but this is a different research area. You are referring to a pilot warning indicator to try to cut down on collisions.

Mr. MINSHALL. Collision avoidance?

Dr. ADAMS. Yes, sir.

The whole area of general aviation is getting increasingly important in our view because the number of aircraft is increasing so rapidly. We feel these types of activities directed toward improved safety are very important.

Mr. MINSHALL. Thank you, Mr. Chairman.

FLIGHT RESEARCH CENTER

Mr. EVINS. Let us turn to the next section, Flight Research Center. This center was established in 1947. It conducts aeronautical and space research within and outside the atmosphere. The work includes effort on problems of takeoff, landing, low speed flights, and supersonic and hypersonic flight.

The current and projected programs at the center include projects such as X–15. This is the one where we had the tragic crash and lost one test pilot.

This center is located 65 miles northeast of Los Angeles. There are 218 acres. There are runways from 5 to 11 miles.

RUNWAYS

You show a picture over here that is rather intriguing to me. You have a strip over here that looks as though it goes into a desert area.

Mr. WEBB. It is a dry lake, Mr. Chairman. It is good for long distances. Some of these runways are 11 miles long.

Mr. EVINS. It provides excellent facilities for testing. The capital investment of this center is $41,069,000 and your jobs remain the same, 455 as against 455 for the last year. You are actually down from 474 2 years ago. Do the operations at this facility overlap those at any of your other facilities?

Dr. ADAMS. Mr. Chairman, I want to assure you there is no overlapping between the activities at this center and others. The unique characteristics of this dry lake area—used by the Air Force and NASA as well—allows testing of very complex, high-speed aircraft. It is a unique place in the country.

The X–15 and B–70, as you mentioned, are examples of flight programs there.

SUMMARY OF FINDINGS ON X–15 ACCIDENT

Mr. EVINS. What findings were made as to the cause of the X–15 accident?

Dr. ADAMS. I will summarize that briefly for you. The report is still being reviewed by NASA and the Air Force. We had a joint review board that conducted an overall assessment and the report is being reviewed by the Air Force right now. I expect within a couple of weeks we will have the report released.

I can summarize for you.

We were able to do a very complete analysis of the accident.

We recovered data after the crash. We also had data telemetered to the ground control center at Edwards prior to the crash. There were a number of factors involved. It is difficult for us to pinpoint the specific one, but it appears that first, the pilot had some distractions due to electrical problems, and after that he either, by mistake or due to some additional problem, may possibly have read the wrong instrument.

Mr. EVINS. There are only two types of mistake, mechanical and human.

Dr. ADAMS. We could not really pinpoint exactly——

Mr. MINSHALL. Either one is fatal.

Mr. EVINS. Were there any last-minute tape recordings or communications back?

Mr. WEBB. Yes, sir. He slid into the atmosphere sideways. This airplane comes in at a terrific speed and the effect is just like a spacecraft hitting the air. So if he just was not lined up straight when he hit the atmosphere, basically, the airplane would break up.

Mr. TALCOTT. Does a man with that much experience in testing experience vertigo too?

Mr. WEBB. Under some conditions, yes, sir. He is a human being, too, and you can produce vertigo in any human being.

Dr. ADAMS. We have a tape of his voice. From the tape there is no indication of any serious difficulty until he starts to reenter. Then he said something felt unusual and he actually entered, as Mr. Webb says, sideways to his proper direction.

Mr. MINSHALL. How did you determine this? Did you have a chase flight on him?

DATA TELEMETERED AND RECORDED ON BOARD

Dr. ADAMS. He was too high for a chase during this portion of the flight, but we have data telemetered to the ground during the flight and, in addition, we have data recorded on board and movies that were recovered of the pilot's instrument panel.

Mr. TALCOTT. Couldn't you contact him and tell him to straighten out?

Mr. WEBB. This airplane is moving too fast. It is going 4,000 miles an hour and the gyrations he went through happened very, very rapidly.

Dr. ADAMS. By the time he realized he was oriented improperly, the airplane immediately started violent rolls and motions. The airplane did recover from the rolls, but at that point in time he was heading down at such a steep angle that he was not able to recover from the steep dive without breaking the airplane up and that is exactly what happened. He tried to pull out of the steep dive. He pulled too many g's for the structure and the structure broke up.

Mr. EVINS. What are some of your principal projects?

X–15 PROGRAM TERMINATING

Dr. ADAMS. We will terminate the X–15 program this fiscal year. The reason for the termination is not because of the accident. The reason is that in order to get continued data from hypersonic flight it would require extensive modifications of the aircraft; to put on new structural concepts, new propulsion concepts. We just are not able to afford those modification costs and consequently have decided to terminate that program at this time.

B–70 PROGRAM

The B–70 program will continue for 6 months into fiscal 1969. The B–70 is providing data directly applicable to the supersonic transport; data on the structural response of large supersonic aircraft to rough air, and problems of handling and maneuvering these very large aircraft. The B–70 is closer to the supersonic transport than any aircraft we have in the country. We have several investigations here to complete by the middle of fiscal year 1969.

We are overlapping the flight of the B–70 with the simulators at Ames that Mr. Webb mentioned before. Those simulators will be used to check out and duplicate the B–70. Having done that, we will then be able to apply those simulators directly to the supersonic transport.

JOINT PROJECTS WITH AIR FORCE

Mr. EVINS. Do you have any joint projects with the Air Force or the Department of Transportation at this time?

Dr. ADAMS. The X–15 has been a joint program with the Air Force from its inception. We assumed the funding of it in January 1968, but we have a number of experiments that we are carrying out directly for the Air Force now. The B–70 has some experiments carried out for the Air Force, but primarily the B–70 is directly in support of the DOT supersonic transport program, so these are clearly joint efforts.

NASA–DOD JOINT PROGRAMS

Mr. EVINS. You may extend your remarks in the record on this. (The information requested is as follows:)

NASA–DOD JOINT PROGRAMS IN AERONAUTICS AND SPACE VEHICLES FLIGHT RESEARCH AT THE NASA FLIGHT RESEARCH CENTER

The NASA, and earlier the NACA, has maintained a close working relationship with the military services. During the mid-1940's this cooperation led to the high-speed research airplane program and the X–1, the world's first supersonic airplane. The X–1 was followed by other Air Force- and Navy-sponsored research airplanes, leading finally to the X–15.

All of the research airplanes have been procured by the military services. The bulk of the preliminary research for each of the airplanes has been done by NASA and the flight test part of the program has been a joint NASA–DOD undertaking. The DOD provided most of the operations cost of the research airplanes; the NASA provided the onsite flight research personnel. On January 1 of this year, however, in accordance with the terms of a NASA–DOD agreement, the NASA assumed the operational cost of the X–15 program with the exception of the host-base support provided by the Air Force. Flights of the X–15 aircraft this year will be devoted almost entirely to several high-priority Air Force experiments.

The NASA had research instrumentation installed in the XB–70 aircraft during construction, to obtain data of importance for the national supersonic transport program and for other large supersonic aircraft. Data were obtained during the Air Force-contractor flight demonstration program. However, specialized tests required by NASA could not be done during the Air Force program. It was logical, then, at the end of the initial Air Force program, that the XB–70 should become a part of the joint NASA–DOD research airplane program. Management and funding responsibility for the program were transferred to the NASA in March 1967.

Two other types of vehicles which are used in cooperative NASA–DOD programs at Edwards at present are the F–111A and the lifting bodies. The F–111A is being instrumented to study inlet-engine-airframe integration problems of turbofan-powered supersonic aircraft configurations. The flight phase of this program will last about a year and a half. The NASA hopes to obtain a second F–111A for use in a comprehensive study of the airframe-buffet characteristics of variable-sweep aircraft. The study will use dynamically scaled models in wind tunnel tests and the F–111A in flight.

The lifting body flight research program uses the Air Force X–24A and the NASA HL–10 and the M2–F2. The joint nature of the NASA–USAF lifting body program parallels closely the pattern established earlier with the research airplanes. The X–24A will make its first flight later this year, following testing in the Ames Research Center's 40- by 80-foot wind tunnel. The HL–10 made its first flight late in 1966; its flight testing will be resumed this year, following additional wind tunnel tests and modifications. The M2–F2 flight program has been delayed as a result of a landing accident in May 1967.

LANGLEY RESEARCH CENTER

Mr. EVINS. Look at Langley Research Center. This is Hampton, Va. This center is directed at the maintenance and improvement of the U.S. position in aeronautics and space.

Is there any duplication at Langley Field with the center in California or your other centers?

WIND TUNNEL STUDIES AT LANGLEY

Dr. ADAMS. The work at Langley on the F–111, for example, is associated with the wind tunnel investigations that back up the flight tests. So we have the ground-based wind tunnel investigations that are followed by the flight work, and the Flight Research Center and the Air Force actually carry out the flight tests. FRC has no wind tunnels at all.

Mr. EVINS. The wind tunnels are at Langley. Langley is in direct support of the military service.

SUPPORT FOR DOD AND FAA

Dr. ADAMS. I should mention that we provide a great deal of support to the Air Force and DOD at the Langley and Ames Centers.

In the case of the aeronautical facilities, the wind tunnel-type facilities, about 40 percent of the time are in support of the DOD and FAA programs. About 25 percent of the time of the scientific-engineering personnel is devoted to supporting work directly requested by DOD and FAA.

Mr. EVINS. You state on page 73 that Langley Research Center is cooperating extensively in the national effort to reduce the seriousness of the aircraft noise problem.

Are you making any progress in this area?

AIRCRAFT NOISE ABATEMENT

Dr. ADAMS. Yes, sir. We have had some very significant results recently. About a year ago Langley let contracts with Boeing and Douglas Cos. to carry out a program——

Mr. EVINS. They did not do it themselves then; they let a contract with private industry?

Dr. ADAMS. Yes, sir.

Mr. EVINS. After all their research, they had to turn it over to private industry to find the answer?

Mr. WEBB. Well, Mr. Chairman, let me just break in there. We did the theoretical work. We paid these companies to produce the equipment and modify the nacelles of the engines and do the flying. Now that information comes back to us for application throughout the industry, so that we can help the FAA set standards, requirements, and regulations.

Mr. EVINS. FAA is working on it, Langley is working on it, and you contract with industry to give you the answer.

Mr. WEBB. We contract with them to fly a big airplane with equipment put on there so that the actual measurements of the effect produced by these noise suppressors can be measured. We save a good deal of money by having the Boeing Co. fly a Boeing airplane with this equipment on it, as against trying to buy one or rent one to fly ourselves. This is the kind of work involved here.

Now, also I would like to point out that these companies, Douglas and Boeing, both have agreed that the work that has been done here will go into the public domain, into a common use so that all future designs may be used. Also, when we come to retrofit these present large-stretch jets to reduce noise, these things will be applied to the

retrofit and the airlines and others will have a much better judgment of what they are buying and what they are paying their money for. It is truly a governmental service.

PROGRESS IN NOISE REDUCTION

Mr. MINSHALL. Before you leave the noise problem, may I ask a question, please?

Mr. Webb, have you made significant advances in reducing the noise in present jet aircraft engines?

Mr. WEBB. Yes, sir. The Lewis Laboratory in Cleveland is working on the engine noise problem and has some contracts leading to a quieter engine, to attack the noise problem at its source.

We are also examining current production models of engines to determine how we can reduce the noise, and also how we can produce an operating mode that permits the pilot to get into an airport and get out of the airport with minimum impingement of noise on the people around the airport.

Mr. MINSHALL. How much reduction in noise? Can you tell us in lay terms how much reduction you anticipate being able to make?

Mr. WEBB. Maybe Dr. Adams should get into this.

Mr. MINSHALL. My question might be, can you reduce the noise factor by a given percentage?

Dr. ADAMS. Let me try to say it a little differently. The decibel is a number that——

Mr. MINSHALL. But people don't understand that. They know how loud a 707 is taking off, and they want to know how much less noisy a 707 will be taking off.

Dr. ADAMS. In order to try to give you some reference, the noise, when several of us are talking here in this room, is probably about 70 decibels.

We know from measurements and many observations that noise above 100 decibels is very annoying. Typical noise of jets coming in near the airport is like 110 decibels. Most of the annoyance we find, by the way, is associated with the approach noise; the whine type of noise associated with the turbine and the fan.

Now, with the tests we have just recently completed, by modifying nacelles for the DC–8, and 707 aircraft, it looks as though we can reduce the noise level of those existing aircraft down to a level of 100 decibels except for regions very near the airport. So this will be more than a factor of two——

Mr. MINSHALL. Is this just on the approach?

Dr. ADAMS. This one is on the approach. This particular work is associated with approach. That is where the majority of the complaints and annoyance is.

Another way of looking at it is this: with these modifications, it appears that we can reduce to less than one-half the area around the airport that has a decibel level of greater than one hundred.

That is one element of the program, to reduce the noise of existing aircraft.

NEW ENGINE DESIGN

Now, another element of the program, which is longer range, and being carried out under the direction of Lewis, is to design a completely new engine which has low noise as a design criteria right from the beginning. This has never been done before because all the present aircraft engines have come from military developments where noise was certainly not a problem. So we are starting from the beginning and designing in low noise as a requirement. We are working on an entirely new engine concept.

NOISE ON TAKEOFF

I might say in the case of this new engine that you also can attack the exhaust noise. That is the noise on takeoff, and we are doing this by increasing the bypass ratio and cutting down on the jet velocity.

Mr. MINSHALL. You are making progress on this?

Dr. ADAMS. We are just in the early phases of this program. We are currently in a study phase. We have study efforts going on in-house, in Lewis and two contracted studies.

Mr. MINSHALL. When do you anticipate any firm results from these studies?

Dr. ADAMS. In fiscal year 1969 we plan to let contracts for detailed designs and initiation of component fabrication for a quieter engine. We will carry out some component tests by 1970. We are working toward the integration of those components into an experimental engine for tests in 3 to 4 years. So this is a longer range program.

SMOKE REDUCTION PROBLEM

Mr. MINSHALL. If anybody can do it, I am sure the chairman will agree with me, Abe Silverstein can. One other question: What are you doing about reducing the exhaust smoke on present-day jet aircraft?

Dr. ADAMS. This present year we have initiated at Lewis Research Center a program to investigate fuels, new fuels, modifications of fuels, that would cut down on the smoke.

Mr. MINSHALL. Does that in your opinion contribute to the pollution of the air around major cities, or is it a minor factor?

Dr. ADAMS. I think it is limted primarily to the ground track of the airplane near the airport. If you park your car at an airport for a couple days, you may find soot deposited.

Mr. MINSHALL. The people in Georgetown are complaining about oil in their swimming pools.

Dr. ADAMS. I can't tell you how much of that oil in the Georgetown swimming pools comes from this.

Mr. MINSHALL. Do you live in Georgetown, Mr. Webb?

Mr. WEBB. No, I live in a little less expensive neighborhood called Cleveland Heights. It is not too far away.

Mr. EVINS. We commend you for your progress in this area and urge you to continue.

The Langley Center at Hampton is 100 air miles from Washington. You have 772 acres, 430 of them are owned by NASA and 320 owned by the Air Force and NASA. You have a capital investment of $337,124,000. Your personnel costs go from $46 million in 1967 to $49 million in 1969. The total fund requirements are $62,765,000 according to your budget estimates. Personnel remains the same, 3,990. Mr. Reporter, place pages 2–72 through 2–77 in the record, and the summary chart on page 2–78.

(The pages follow:)

LANGLEY RESEARCH CENTER

Mission

The activities of the Langley Research Center are directed to the maintenance and improvement of the U.S. position in aeronautics and space. Langley Research Center assists in the attainment of this objective through an extensive program of advanced research and technology which includes analytical studies and scientific investigations in wind tunnels, specialized laboratories, and in free-flight. Langley Research Center is principally concerned with the identification of new scientific opportunities for flight progress, the recognition and mastery of critical problems which must be solved to achieve advanced aerospace flight goals, the provision of a sound technological basis for the establishment of new programs, and for the successful design, development, and operation of flight vehicles of all types. In carrying out its mission, Langley Research Center Center works closely with the aerospace and educational communities in a planned effort to enhance this Nation's manpower capabilities.

The Langley Research Center aeronautical research program is focused on the formulation and improvement of the technological basis for the successful development and utilization of aircraft of all types. These include efficient supersonic and high-subsonic-speed transports, high-performance military aircraft, effective V/STOL aircraft, practicable hypersonic ramjet-powered vehicles, and safe general aviation aircraft. Experience gained in Langley Research Center's broad program of aeronautical research provides an outstanding basis for this Center's direct support of the military services, the Federal Aviation Administration, and the industry in their progressive aircraft development efforts, such as the F–111, C–5A, FX, VFAX, AX, and the supersonic transport.

Major emphasis in Langley Research Center's high-speed aerodynamics research has been directed to the evolution and refinement of practicable aircraft design characteristics to provide maximum flight efficiency and performance while exhibiting appropriate operational capabilities from cruise speed to the landing condition. The Langley Research Center variable-sweep wing for supersonic aircraft represents a major advance toward this goal, and is finding important applications in military and commercial aircraft.

A Langley Research Center design concept, the supercritical wing, offers strong potentials for increased efficiency at higher subsonic speeds, and is being aggressively evaluated and refined. This is one of many concepts which have been the products over the years of Langley Research Center's broad program of advanced research and technology.

Configurations for hypersonic vehicles are under investigation in wind tunnels and through research using rocket-propelled free-flight experimental techniques to increase our understanding of the complex problems involved in the design and operation of an airplane intended for flight in this speed range. Another challenging research objective in the hypersonic range is the efficient integration of advanced propulsion systems into high performance aircraft. A Langley Research Center program for the establishment and demonstration of the tech-

nology for practicable hypersonic ramjet aircraft propulsion systems is rapidly progressing.

Wide ranges of scientific investigations are leading to the establishment of rational criteria for the design of efficient and operationally effective V/STOL aircraft, including the development of advanced helicopter technology, as in the promising application of the hingeless rotor concept pioneered by Langley Research Center. In investigations on V/STOL aircraft, a subject of research at this Center since the late 1940's, considerable emphasis is placed on defining and providing adequate stability and control over the expanding operating ranges, and to achieve optimum man/machine compatibility.

At Langley Research Center, unique flight simulators, fixed and rotor-wing aircraft flight experiments, and laboratory facilities are used to explore and master problems of advanced flight operations. These include supersonic transport airways integration and terminal approach and landing, fighter combat maneuvers, flying qualities and piloting-aid requirements for efficient all-weather terminal-area operations of V/STOL aircraft, simplified aircraft proximity warning indicators, and other improved piloting aids for general aviation aircraft. Other subjects of interest to this Center in the operational area are the detection of clear-air turbulence, the improvement of the directional control and braking of aircraft on wet and slippery runways, the definition of spin characteristics and optimum recovery techniques of new aircraft, and the behavior of the new large jet transport aircraft in emergency ditching on water.

A broad research program at Langley Research Center continues to update and extend basic criteria for atmospheric, acoustical, maneuvering, and other operational loading of aircraft structures, and for prediction and control of the associated dynamic response and flutter of large and flexible aircraft under such environments. Research is providing improved construction technologies for high-performance aircraft including the development of the potentials of advanced materials, multi-material arrangements and structural configurations that offer promise of better accommodation of the high loadings and deflections, severe aerodynamic heating, fatigue stresses, corrosive atmospheres, and cryogenic fuel storage for future operations.

Langley Research Center is cooperating extensively in the national effort to reduce the seriousness of the aircraft noise problem. This Center is developing aircraft configuration features and operating procedures designed to ameliorate sonic boom effects; is studying the basic nature of propulsion system sound generation and propagation as a foundation for the development and demonstration of new compressor arrangements, inlet absorbers and flow controls, and jet mixing processes that can substantially improve the noise characteristics of future systems. Other noise studies include the investigation of the effectiveness and safety of variations in take-off, climb, terminal approach and landing, and airport operational procedures that can reduce airport community annoyances; and the definition of factors that control the subjective annoyance character of aircraft noise and its effects on ground structures. The Langley Research Center conducts a broad range of timely space research in support of major national projects such as the manned Apollo mission, and manages important laboratory and flight activities designed to increase the Center's knowledge of the universe and to provide this nation a rational technological foundation for the definition, assessment, and successful execution of future space endeavors.

In support of the Apollo lunar landing and applications programs, Langley Research Center is contributing significantly in every area of the flight mission. This research includes the prediction of the structural dynamic characteristics of large launch vehicles such as the Saturn V in combination with the Apollo spacecraft, simulator development and astronaut indoctrination in effective operational techniques and piloting aids for execution of critical lunar landing and rendezvous maneuvers, investigation of lunar module landing loads and demonstration of the prototype landing system under simulated lunar gravity, the provision of advanced topographical and characteristics data on lunar terrain for landing site selection and piloting guidance, the establishment of mobility characteristics and surface operational techniques for space-suited explorers under lunar gravity, the development of control moment gyrostabilization and precision-pointing-control technology for the Apollo telescope mount spacecraft

cluster, scientific contributions to the knowledge of atmosphere entry, aerothermodynamics, heat shielding, and the circumvention of entry communications "blackout," the investigation and development of a parawing ground-landing system capability, and the provision of advanced technological experiments for the Apollo applications program.

Other basic research and development activities, the depth and scope of which are intended to contribute vitally to the attainment of national flight aspirations, include the precision pointing of space optical systems; the establishment of requirements and advanced design concepts for controlled atmosphere entry and landing spacecraft, refurbishable orbital logistical spacecraft, re-usable launch systems, manned orbital research laboratories, orbital astronomical laboratories, and expandable space structures; the definition and alleviation of space radiation, micrometeoroid, thermal, and vacuum hazards to vehicular systems, electronic and optical components, viable tissues, and materials; the evaluation and enhancement of the ability of man to work in the space domain; and the generation of improved technology for long-duration regenerative life support components and systems, simplified navigation and control systems, advanced horizon sensors, precision stabilization equipment, reliable and efficient space instrumentation and communication devices, high-reliability solid-propellant rocket motors and vehicles, thrust-modulating hybrid-propellant rocket motors, and unique aerospace materials.

The Langley Research Center maintains a leading position in the investigation of fluid physics problems. Its work in magnetoplasmadynamics is making contributions to the geophysical and stellar sciences, and is disclosing new potentials in electrical propulsion. In the area of magnetoplasmadynamics, an arc device under study appears promising as an advanced propulsion technique with potential usefulness beyond the ion engine concept.

Langley Research Center is responsible for the development, procurement, and operation of the solid-propellant Scout launch vehicle in its various national and international satellite and entry vehicle applications; for other spacecraft systems and experiments for evaluation of the earth's atmospheric characteristics, the radiation and micrometeoroid hazards of the earth and moon environments, the lunar gravitational field, and the properties of the lunar surface; and provides research and development support for a number of other unmanned spacecraft and launch vehicle projects.

An extensive program of research is conducted by Langley Research Center to provide guidance and technology for the formulation and execution of advanced planetary flight missions. This includes the comprehensive analysis of the scientific merits, technical feasibility, and costs of various alternate mission schemes; the optimization of space systems arrangements and operational modes; the investigation of heat transfer and heat shielding concepts for planetary-atmosphere and earth-return entry vehicles; and development and demonstration of efficient atmosphere decelerators and landing systems; the provision of technology for advanced deep-space guidance and control systems, and electrical power supplies; and the development of practicable and effective approaches to the achievement of acceptable levels of sterilization in planetary landing spacecraft.

Description

The Langley Research Center, Hampton, Va., is located approximately 100 air miles south of Washington, D.C. The Center is divided into two separate areas adjacent to the runway facilities of the Langley Air Force Base, and occupies 772 acres of Government-owned land. The west area consists of 750 acres of which 430 acres are owned by NASA and 320 acres are under permit from the Air Force. The east area consists of 22 acres under permit from the Air Force. Runways, some utilities, and certain other facilities are used jointly by NASA and the Air Force. In addition, there are 110 acres of NASA-owned land located in the city of Newport News, Va., 3,276 acres under permit from other Government agencies, and 26 acres under lease. The total acreage owned, under permit, or leased, is 4,184. The total capital investment of Langley Research Center, including work in progress and contractor-held facilities, as of June 30, 1967, is $337,124,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	1967	1968	1969
Personnel	$46,865,000	$48,726,000	$49,246,000
Travel	1,542,000	1,188,000	1,188,000
Automatic data processing	6,557,000	3,515,000	3,515,000
Facilities services	6,452,000	6,077,000	6,247,000
Technical services	310,000	310,000	310,000
Administrative support	2,611,000	2,279,000	2,259,000
Total, fund requirements	64,337,000	62,095,000	62,765,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Manned space flight:			
Apollo	17	2	2
Apollo applications		14	14
Advanced missions	6	6	6
Space science and applications:			
Physics and astronomy	72	41	18
Lunar and planetary	155	132	132
Launch vehicle procurement	37	35	35
Bioscience	2	2	2
Space applications	14	15	15
Advanced research and technology:			
Basic research	334	327	347
Space vehicle systems	679	645	606
Electronics systems	441	405	380
Human factor systems	121	115	115
Space power and electric propulsion systems	22	21	21
Chemical propulsion	40	41	47
Aeronautical vehicles	811	819	826
Tracking and data acquisition	21	19	19
Technology utilization	5	5	5
Subtotal, positions by program	2,777	2,644	2,590
2. Support positions:			
Director and staff	35	35	35
Administrative support	511	511	511
Research and development support	838	800	854
Subtotal, support positions	1,384	1,346	1,400
Total, permanent positions	4,161	3,990	3,990

Mr. EVINS. The subcommittee will suspend until 1:30.

LEWIS RESEARCH CENTER

Mr. EVINS. The committee will come to order.

We will now look at the Lewis Research Center, Cleveland and Sandusky, Ohio.

This is one of the principal research centers in the area of aircraft and spacecraft propulsion, and power generation systems for spacecraft. The scope of research ranges from individual components to the complete system. Several large launch vehicle and power generation programs are assigned here. The Centaur and Agena launch vehicle projects are under this Center's supervision.

ACREAGE AT LEWIS AND PLUM BROOK

Lewis Research occupies two sites. You have about how many acres in the two and what is the total capital investment?

Mr. WEBB. There are 364 acres now in the original site, and 6,031 acres are in the area owned by the Government at Plum Brook. We are using all of the 5,981 owned by the Government. There are 3,000 additional acres over which easements were asserted or in force at the end of the war.

Mr. EVINS. Do you have a little too much acreage out there, Mr. Administrator?

EASEMENTS AT PLUM BROOK

Mr. WEBB. Mr. Chairman, we have a nuclear reactor there. We have some of our most hazardous fuel testing there. It would seriously impair this facility if we didn't maintain this 3,000 acres here. We are using 1967 and 1968 money in order to obtain that land and make sure that we are not restricted in our future operations. Farmers use this land during the farmer season, but can be evacuated, if necessary, in times of hazardous testing. We must have control of this buffer land.

Mr. EVINS. The total capital investment, including contractor-held facilities, is estimated to be $354,514,000, of which $95 million represents facilities located at Plum Brook.

You show an increase in personnel from $55 million to $56.3 million. Travel remains the same. Automatic data processing is projected to increase.

Other items which are showing a decrease in your budget are facilities service, technical services, and administrative support. In total, you have an increase over last year. Personnel is estimated to be 4,485, the same as last year.

You have over 200 buildings on this site and 55 were built by NASA. Do you have any other plans for construction?

NO CONSTRUCTION PLANS

Dr. ADAMS. There are no construction items this fiscal year, Mr. Chairman.

We have had a reduction in complement there, as you notice, from fiscal 1967 to 1969. We have had a reduction of about 200 people.

OPERATIONS AT PLUM BROOK

Mr. EVINS. What are you doing at your Plum Brook station?

Dr. ADAMS. Well, Plum Brook carries out the hazardous type of tests which Mr. Webb mentioned, such as a propulsion test facility, a nuclear reactor, and other facilities for carrying out tests with hazardous fuels. You have to be in a remote area in order to carry out these types of tests. You couldn't do that in these magnitudes at the Cleveland site.

Mr. WEBB. What we did, Mr. Chairman, was to take over a World War II facility that had been developed for ammunition processing, manufacturing, and storage; and since it was a large acreage, due to the explosive nature of the ammunition, it afforded this additional value for our Lewis Laboratory.

I would say the whole installation is worth a great deal more with the Plum Brook facility than it would be without it.

People can drive out there. If you were out west, people would have to fly out there and carry equipment back and forth.

There is certain limited research work done in toxic materials which we can do there; not to the extent you can in other places, but we do have some capability to be able to do that work at Plum Brook.

I might add one other thing. The nuclear reactor there is the only one in the country capable of holding within it operating systems that function within the reactor. They can operate within this environment of radiation. It is a very important facility.

LIAISON BETWEEN LEWIS AND PLUM BROOK

Mr. MINSHALL. How do you maintain liaison between the Cleveland site and the Plum Brook installation? Do you have your own aircraft?

Mr. WEBB. Mostly by automobile.

Dr. ADAMS. By automobile. Yes, sir. It is about 45 minutes. There is a new highway there. It is a good road.

SPACE NUCLEAR PROPULSION OFFICE

Mr. EVINS. The next facility is the Space Nuclear Propulsion Office. This facility is designed to develop nuclear rocket systems.

As a result of changes in the space planning program, a decision has been made to initiate the development of the 1,500 megawatt, approximately 75,000-pound thrust Nerva I engine for flight status in 1976.

This facility is a joint AEC–NASA undertaking.

AEC AND NASA FUNDS MERGED

Mr. WEBB.The funds in our budget are merged with those of the AEC and then spent as one uncompartmented fund. The work is carried on with general funding by the AEC in the areas of reactor work, and by NASA in the areas of the engine, and the engineering of the use of the power from the reactor.

Mr. EVINS. The headquarters of this facility are located where?

Dr. ADAMS. Germantown, here in the Washington area. They also have an engineering operation in Cleveland and, of course, the test station in Nevada.

Mr. WEBB. Jackass Flats, Nev.

Mr. EVINS. What is your facility in Cleveland? You don't indicate this anywhere in your budget.

Dr. ADAMS. This is a management team. They don't operate any actual equipments or facilities, but they are an engineering management team that is responsible for the technical direction of the nuclear rocket program.

Mr. WEBB. That is mostly done by two contractors, Mr. Chairman, Aerojet General and Westinghouse. Most of the money goes for the developmental work of these companies.

NUCLEAR POWER IN SPACE

Mr. EVINS. Nuclear power holds great potential for long times in space, does it not, Mr. Administrator?

Mr. WEBB. Yes; and it also offers the potential of magnifying the specific impulse of efficiency of the amount of fuel you have to carry, analogous to the so-called miles per gallon. This is something like 450 for our more efficient fuels now. We believe that with the present technology, Nerva I will get up to somewhere between 800 and 900 specific impulse units; twice the efficiency of the present system. It is a very important field to pursue.

Mr. EVINS. It is to be used for aircraft and missiles of the future.

We have had an experiment in nuclear power. You can have a nuclear submarine or ship, but in aircraft they decided they couldn't do it after several years of experimentation.

INTEREST IN NUCLEAR POWER FOR AIRCRAFT

Mr. WEBB. With the advent of the new, very large aircraft such as the C5–A, there is revived interest in nuclear power for airplanes. In order not to lose the value of some $1.5 billion that had been spent, we have had a small study effort running into something like $200,000 or $300,000 a year. We have been continuing to make sure we understood what new advances would do to the previous technology and how you could consider doing the next job ahead. My general belief, Mr. Chairman, is that in the next 1, 2, or 3 years, you are going to see a revived interest in nuclear propulsion for very large aircraft. This doesn't mean, I believe, that they will design a model to be flown with it, but that experimental work, component work and so forth, is very unlikely to look promising enough to start some development work.

Dr. Adams may wish to modify that. Am I too ambitious with respect to time?

WEIGHT OF REACTOR AND SHIELD

Dr. ADAMS. No, sir; I think this is very true. The C5–A weighs about 750,000 pounds. As you start to envision aircraft in excess of 1 million pounds, then the weight of the reactor and its shield starts to be a reasonable percentage. In the past, for smaller type aircraft, the weight of the reactor was just too great, percentagewise.

Mr. MINSHALL. What is the weight of the reactor with its shielding?

Dr. ADAMS. The weight of the reactor and shielding is estimated to be about 200,000 to 250,000 pounds.

Mr. MINSHALL. How bulky is this piece if it was put in the C5–A, for example?

Dr. ADAMS. The reactor and shielding is about 15 feet in diameter. The C5–A, for reference purposes, is about as long as a football field, and when you start talking about airplanes of that size, then a reactor, with its weight and its volume, start to be a reasonable size and weight.

COOPERATION WITH AIR FORCE

Now we are working with the Air Force on this. The Air Force is carrying out studies from the point of view of military applications and we are working on the critical technology associated with safety and with long lifetime reactors. We are putting $250,000 a year on these critical technologies.

Mr. WEBB. The reactor that we use with the Nerva engine is about 4 feet in diameter and about 7 in length, but this can operate only for quite short periods of time. A reactor for an airplane would have to operate over very much longer periods. You can get a great deal of efficiency out of a small reactor if it is designed right, but the one for an airplane would certainly be much more bulky than the ones we use for rockets.

Mr. JONAS. Are you planning to develop the Nerva here or is this just a test?

RESPONSIBILITIES OF SNPO

Mr. WEBB. The development of the Nerva engine and the reactor is handled out of this office.

Mr. JONAS. Do you mean the development or just the management?

Mr. WEBB. The development is largely done by contractors, but the management, including the technical management of the development, comes out of this office.

They call on other units of the AEC and of NASA to help solve problems, but they provide the technical interface with the contractors and also supervise the tests.

Mr. JONAS. You don't plan to build the engine here?

Mr. WEBB. No, sir. Westinghouse will build the reactor and Aerojet General will build the engine.

Mr. EVINS. Your management is at Germantown; research is at Lewis; and the testing is in Nevada. Is that about the summation of your operation?

Mr. WEBB. The engine development and manufacture is done by Aerojet General at Sacramento and the Westinghouse reactor operation is at Pittsburgh.

Mr. EVINS. You go out to this 90,000-acre site in Nevada for the testing?

Mr. WEBB. Yes, sir.

INCREASE IN TECHNICAL SERVICES

Mr. EVINS. Mr. Administrator, your costs go up in personnel from $1.6 million to $1.9 million in the last 2 years. One of the biggest increases over last year is technical services, which jump up from $10,000 to $71,000. Will someone speak to this?

Mr. WEBB. Mr. Boyd Myers will give you a figure in just a moment.

Mr. MYERS. There is a $61,000 increase in 1969 for some engineering studies that are going to be carried out for Jackass Flats. These are some studies having to do with the safety area.

Mr. EVINS. What is the nature of the engineering studies?

STUDIES IN SAFETY AREA

Mr. MYERS. These include a study in the safety area where they are examining fuel element handling and another is on a fire alarm system. A third study is concerned with the effects of radiation on existing and future radio frequency communication systems. These studies are in the $61,000 increase in engineering services.

Mr. WEBB. Once you fire off one of these test engines, Mr. Chairman, it and all of the components and other things associated with it become quite radioactive. So you do have an element of danger there, just as you do in any nuclear testing.

Mr. EVINS. Are all of your facilities at Jackass Flats completed?

NERVA I WILL USE PRESENT TEST STANDS

Mr. WEBB. We had proposed to the committee last year about $22.5 million worth of construction of test stands for the Nerva II engine. One reason we returned to the Nerva I engine when there was the disapproval was that we could test the Nerva I with the present stands. If we go to a flight stage for the Nerva I, if we decide in the

1970's to put it into that stage and fly it, we will then have to build some facilities for the testing of the stage.

Mr. EVINS. You have adequate acreage there for expansion if need be.

Mr. WEBB. Yes, sir.

JUSTIFICATION MATERIAL

Mr. EVINS. Mr. Reporter, place in the record pages 2–94 and 2–95 and your staffing summary chart on page 2–96.

(The pages follow:)

SPACE NUCLEAR PROPULSION OFFICE

Mission

The mission of the Space Nuclear Propulsion Office is to provide the necessary research, design and engineering data, test hardware, and general technology required to develop nuclear rocket systems with power levels, operating times, restart conditions, and specific impulse values suitable to advanced space exploration missions. Through the use of nuclear rocket propulsion, significant performance advantages accrue to such missions as lunar logistics operations, deep space probing with heavy spacecraft, and unmanned planetary fly-by.

As a result of changes in the space program planning, a decision has been made to initiate the development of the 1,500 megawatt, approximately 75,000 pound thrust Nerva I engine for flight status by early fiscal year 1976.

Description

The nuclear rocket program is a joint AEC–NASA undertaking. To insure an integrated program, the Space Nuclear Propulsion Office, established by an interagency agreement between Atomic Energy Commission and NASA, manages all aspects of the program.

The Space Nuclear Propulsion Office consists of a headquarters office located at Germantown, Md., and three field extensions located in Ohio, New Mexico, and Nevada. At the Nevada location, the nuclear rocket development station was established to provide a site for ground static testing of the reactors, engines, and eventually, vehicles associated wtih nuclear rocket development.

The nuclear rocket development station consists of a 90,000-acre site owned by the Atomic Energy Commission, approximately 90 miles northwest of Las Vegas, Nev. The total capital investment of NASA-funded facilities including work in progress and contractor-held facilities, as of June 30, 1967, is $54,634,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$1,691,000	$1,893,000	$1,943,000
Travel	193,000	195,000	195,00
Automatic data processing	26,000		
Facilities services			
Technical services	66,000	10,000	71,000
Administrative support	4,000		
Total, fund requirements	1,980,000	2,098,000	2,209,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program, advanced research and technology: Nuclear rockets	110	109	109
2. Support positions:			
Director and staff	2	2	2
Administrative support	2	2	2
Research and development support	3	2	2
Subtotal, support positions	7	6	6
Total, permanent positions	117	115	115

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART
SPACE NUCLEAR PROPULSION OFFICE

STAFFING SUMMARY

	68	69
Excepted	3	3
GS-16	6	6
GS-15	25	25
GS-14	30	32
Other GS	51	49
Total Permanent	115	115
Temporary	-	-
Total Positions	115	115

OFFICE OF THE MANAGER

	68	69
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	1	2
Other GS	1	-
Total Permanent	5	5

ALBUQUERQUE EXTENSION

	68	69
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	-	-
Other GS	-	-
Total Permanent	1	1

NERVA BRANCH

	68	69
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	-	-
Other GS	-	-
Total Permanent	4	4

CLEVELAND EXTENSION

	68	69
Excepted	1	1
GS-16	2	2
GS-15	14	14
GS-14	20	21
Other GS	30	29
Total Permanent	67	67

ADVANCED ENGINE BRANCH

	68	69
Excepted	-	-
GS-16	1	1
GS-15	2	2
GS-14	-	-
Other GS	1	1
Total Permanent	4	4

NEVADA EXTENSION

	68	69
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	9	9
Other GS	19	19
Total Permanent	32	32

FACILITIES BRANCH

	68	69
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	-	-
Other GS	-	-
Total Permanent	2	2

AO 2-96

NASA Headquarters

Mr. Evins. We will now refer to the headquarters office. The mission of the NASA headquarters is to plan and provide executive direction for the programs authorized by the Congress.

Place in the record pages 2–100, 2–101 and 2–102.

(The pages follow:)

NASA HEADQUARTERS

Mission

The mission of the National Aeronautics and Space Administration Headquarters is to plan and provide executive direction for the programs authorized by the Congress, and to implement the national objectives stated in the National Aeronautics and Space Act of 1958, as amended. The principal statutory functions are:

1. To conduct research into, and for the solution of, problems of flight within and outside the earth's atmosphere and to develop, construct, test, and operate aeronautical and space vehicles for research purposes.
2. To conduct activities required for the exploration of space with manned and unmanned vehicles.
3. To arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations.
4. To provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.

The following offices at headquarters assist management in carrying out the technical aspects of this mission:

Office of Manned Space Flight.—Responsible for all NASA activities directly involving manned space flight missions. Programs include:

Apollo: To provide a broad national capability for manned space exploration, including earth orbital, lunar orbital, and lunar surface operations, and to achieve the specific objective of manned lunar landing and return within this decade;

Apollo applications: To include the improvement of manned space operations and hardware technology and the initiation of extended use of men for scientific, technological, and applied observations in space, and to provide a fuller understanding of the abilities of men, vehicles, and systems to function effectively in the space environment by extending the flight of existing Apollo/Saturn equipment; and

Advanced missions: To plan a broad program of explorations which will achieve and maintain a position of space leadership for the United States.

The Office of Manned Space Flight has launch responsibility for all major manned and unmanned missions utilizing the three installations primarily concerned with the manned space flight programs. These installations are: the George C. Marshall Space Flight Center, including Mississippi Test Facility, Michoud Assembly Facility, and Slidell where a computer facility is located; the Manned Spacecraft Center, including NASA activities at the White Sands Test Facility; and the John F. Kennedy Space Center, NASA, including NASA activities at the eastern and western test ranges.

Office of Space Science and Applications.—Responsible for the NASA automated space flight program directed toward scientific investigations of the earth, moon, sun, planets, and interplanetary space utilizing ground-based, airborne, and space techniques such as sounding rockets, earth satellites, and deep space probes; for scientific experiments to be conducted by man in space and selection and training of astronaut-scientists; for the research and development of space flight applications in such areas as meteorology, communications, navigation, geodesy, and earth resources surveys, and for the support of operational systems using these developments; and for the development, procurement, and use of light and medium-class launch vehicles, such as Centaur.

The Office of Space Science and Applications has an overall institutional responsibility for those NASA installations primarily involved in space science and applications programs. These are the Goddard Space Flight Center, Wallops

Station, the Jet Propulsion Laboratory (a Government-owned facility operated for NASA by the California Institute of Technology), and the NASA Pasadena Office, a component field activity of Headquarters.

Office of Advanced Research and Technology.—Responsible for the planning, direction, execution, evaluation, documentation, and dissemination of the results of all NASA research and technology programs which are conducted primarily to demonstrate the feasibility of a concept, structure, component, or system which may have general application to the nation's aeronautical and space objectives. This office is also responsible for coordinating NASA's total program of supporting research and technology related to carrying out the specific flight missions in order to avoid unnecessary duplication and to insure an integrated and balanced agency research program.

In addition, this office has overall institutional responsibility for the research centers primarily involved in carrying out NASA's advanced research programs. These installations are: the Ames Research Center, the Electronics Research Center, the Flight Research Center, the Langley Research Center, the Lewis Research Center, and the Space Nuclear Propulsion Office.

Office of Tracking and Data Acquisition.—Responsible for the development implementation, and operation of tracking, data acquisition, communications, and data processing facilities, systems, and services required for NASA flight systems. In addition, this office is responsible for agencywide coordination of the management of automatic data processing systems and services.

The NASA Pasadena Office, Pasadena, Calif., was established in 1966 as a component field activity of the NASA Headquarters' Office of Space Science and Applications. The mission of the NASA Pasadena Office (NaPO) is to negotiate and administer NASA contracts with the California Institute of Technolgy for the operation of the Jet Propulsion Laboratory; provide patent and technology utilization services as they relate to prime and subcontracts at the Jet Propulsion Laboratory; and perform such additional procurement, contract administration, and other functions as may be assigned by the Associate Administrator for Space Science and Applications. In addition, certain public affairs, communications and financial management functions, which are presently the responsibility of the western support office (WSO) in Santa Monica, Calif., are being transferred to NaPO. WSO, which has provided administrative and technical support to NASA elements on the west coast, is in the process of being closed. Those functions performed by WSO which are not being transferred to NaPO are being absorbed by other NASA field installations and headquarters. This organizational change will be completed by the end of March 1968.

Description

The NASA Headquarters is located at 400 Maryland Avenue SW, Washington, D.C., and also occupies other buildings in the District of Columbia and nearby Virginia. Except for some office space leased in the District of Columbia and a storage area in Virginia, personnel occupy Government-owned buildings. The NASA Pasadena Office is physically lcoated at the Jet Propulsion Laboratory in Pasadena, Calif.

Mr. EVINS. You say the Pasadena, Calif. facility was established in 1966 as a component field activity of NASA headquarters. The mission of the Pasadena office is to negotiate and administer NASA contracts. You work with the California Institute of Technology in cooperation with the Jet Propulsion Laboratory. Cal-Tech administers the contract with JPL. Then you have a western support office at Santa Monica, which is being transferred into your other office?

WESTERN SUPPORT OFFICE CLOSED

Mr. WEBB. And this is the office we are closing.
Mr. EVINS. You are closing the western support office?
Mr. WEBB. Yes, sir.
Mr. EVINS. You are consolidating it with your Pasadena office?
Mr. WEBB. Yes, sir.
Mr. EVINS. Is JPL operated by Cal-Tech?

Mr. WEBB. Yes, sir; JPL is operated by Cal-Tech.

Mr. JONAS. I thought you had no room for expansion at JPL?

Mr. WEBB. This is not, in effect, an expansion. It is a reduction of the personnel of the office; a transference of the functions, some of them, to this office at JPL, but this will not provide for any increase in personnel.

It was a small office anyway; a total of 76 people.

Mr. EVINS. Look at your summary on page 2–103. There is a decline in personnel cost from $38 million to $37 million. Travel remains about the same. Automatic data processing increases slightly. Facilities services are decreased; $766,000 to $682,000. Then there are technical services increased from $12.6 million to $12.9 million. And administrative support, $5.6 million to $5.8 million. Thus budget is for headquarters and the western office; is that correct?

Mr. LILLY. Yes, sir.

Mr. EVINS. The overall budget for headquarters and the western office under the headquarters is $60,606,000.

HEADQUARTERS PERSONNEL LEVEL

Mr. JONAS. It looks like you could have gotten back down to 1967 personnel levels. You went up last year when you were expecting substantial expansion of your program. Now you are cutting back, but you don't get your personnel back to the 1967 level.

Mr. WEBB. We have some pay raises too, Mr. Chairman.

Let Mr. Lilly speak to that, please.

Mr. LILLY. Mr. Jonas, the total increase here has been because of the rise in the salaries of personnel. I can show you something on what the cost of our people would be if we still had the same level of salaries.

Mr. JONAS. It costs $2 million you said yesterday.

Mr. LILLY. If our salaries in the total of NASA were the same as they were in fiscal year 1966, the cost would be only $376 million as opposed to $442 million. In fact, all of our other costs have gone down since 1966, and our personnel costs have gone up only as the cost of the pay raises voted by Congress have been incorporated.

Mr. WEBB. Let me say also, Mr. Jonas, that as we reduce our overall work force by 140,000 people over a period of 2 years' time, the requirement for good management in making that adjustment without destroying the program is also very great. In many ways the workload on the headquarters and on our center offices has not declined in the same way as the outside contractor personnel.

CONTRACTOR EMPLOYEES

Mr. JONAS. You always use that figure but in order to understand what we are talking about, we have to add that this includes all of the employees of your contractors.

Mr. WEBB. Yes, sir; but to adjust the program with your contractors, where you are operating under one set of assumptions and one set of contracts, then you have to make such major adjustments without having the whole program get out of kilter, that requires very good——

Mr. JONAS. You haven't had any reductions in administration that would be in proportion to this reduction of 140,000 overall.

Mr. WEBB. We have increased the workload of the managers in order to handle the outside, contracted portion of the work that is in a state of flux.

Mr. JONAS. Are you saying that when you cut down on programs and reduce total employment, including employees of contractors, that increases the workload of the management cadre?

MANAGEMENT WORKLOAD INCREASE

Mr. WEBB. For a time, until you get through the adjustment.

Also, the work of the contractors has been done in very large amounts to produce equipment that would never fly, but which would be tested to prove precisely what you would make in order to fly. Having gone through that phase, the equipment to fly is coming into our hands, going into our facilities, like these big vacuum chambers, and being prepared for flights. So in a sense our workload has continued to build up in that area where we were receiving the flight equipment and getting it to the launch pad.

Mr. JONAS. Tell me this: With a cutback in Apollo applications, you have an increase in personnel. How do you account for that?

Mr. WEBB. Well, we will ask Dr. Mueller to speak to that.

Dr. MUELLER. Increase in personnel where, Mr. Jonas?

Mr. JONAS. In the headquarters office. From 119 in 1967 to 124.

AAP PROGRAM GROWING

Dr. MUELLER. Mr. Jonas, although we cut back in the funds, we nevertheless did get $253 million allocated to the office last year. We are requesting $439.6 million this year, so that this represents essentially a holding level, while the program is actually growing.

You say we got cut back. We started from zero in 1967.

Mr. JONAS. Do you mean you asked for more people than you got?

Dr. MUELLER. No, sir. We asked for more money than we got, but we did get $253 million and we needed more people in order to effectively utilize that money during this year and next year. Our office of manned space flight has stayed constant.

What we are really doing is transferring people to Apollo applications from other parts of the organization.

Mr. WEBB. The 124 people, Mr. Jonas, are related to the 1969 budget request which is substantially above the 1968 budget request, and the work is becoming quite active to implement that program.

Dr. MUELLER. You will notice that Apollo has been going down. The Apollo applications, which is now picking up that workload, has had to grow. In fact, it isn't growing as much as I think it ought to in order to adequately handle the task.

TECHNICAL INFORMATION PROGRAMS

Mr. EVINS. You go from $12.6 million to $12.92 million for technical services. What is this increase?

Mr. LILLY. That increase in technical services is all due to the scientific and technical informational and educational programs where

we are adding approximately 12,000 current technical reports into the system.

Mr. EVINS. Give us a breakdown table of what your $12,920,000 is for in technical support of a headquarters. Will you supply that for the record?

Mr. LILLY. Yes, sir. That basically breaks into two parts; into the engineering services and into the scientific and technical information and educational program.

Mr. EVINS. Supplies, bulletins, and reports; is that the technical services?

Mr. LILLY. Yes, sir.

Mr. EVINS. The personnel cost is not included in that amount?

Mr. LILLY. Not Government personnel, sir.

Mr. EVINS. That is a lot of money for reports, $12.9 million.

Mr. LILLY. I will supply you more complete detail on that for the record.

(The information requested is as follows:)

1969 BUDGET ESTIMATE DESCRIPTION OF TECHNICAL SERVICES CATEGORY NASA HEADQUARTERS

[Dollars in Thousands]

	1968	1969	Change
A. Engineering services	$280	$280	
1. Reliability and quality assurance studies	98	98	
2. Other engineering services	182	182	

Engineering services consist of a number of studies such as reliability and quality assurance, occupational medicine, and other related studies. There is no increase requested for this category in 1969.

B. Scientific and technical informational and educational programs	12,320	12,640	320
1. Operation of headquarters technical library	123	123	

The estimate for the headquarters library reflects the continuation of operations at the current level. Included are costs for essential library reference and announcement items, such as technical books, subscriptions to scientific and technical journals, specialized bibliographical and reference tools, and similar materials required to serve and support the headquarters technical staff.

2. Scientific and technical information	8,390	8,577	187

The headquarters scientific and technical information program, estimated at $8,577,000 for fiscal year 1969, is $187,000 above the level for the previous year. The fiscal year 1969 increase represents the cost of processing an anticipated approximately 12,000 additional technical reports in the field of aeronautics and space sciences. The program provides for the design of an integrated system to insure that NASA's work and its findings are reported both comprehensively and selectively, that all suitable information is provided to organizations and interests that can properly utilize it, and that any of its scientific information can be identified and made available in a meaningful form to specialized endeavors that in any way promote the national aeronautics and space programs.

Of the total fiscal year 1969 requirement, approximately 60 percent covers the cost of operating the NASA Scientific and Technical Information Facility, the computer-based service station forming an integral part of the total program. Day-to-day operations carried on here involve a wide-ranging complex of highly specialized services and products centering round a comprehensive, computer-based system which permits high-speed input processing, publication preparation, search and retrieval, and dissemination of information in a variety of forms to a worldwide aerospace community.

The 40 percent balance of the total requirement provides for services essential to support the NASA technical information program of a worldwide character at the necessary level of range and scope. Such services include: documentation efforts to insure worldwide coverage of the report and published literature; translations of foreign-language technical information materials; a variety of technical publications, such as reports, handbooks, data compilations, conference proceedings, industrial applications notices, bibliographies and other working tools, a NASA announcement journal, "Scientific and Technical Aerospace Reports," and other journals and services. Included also in this 40 percent balance of requirements is the research and development effort devoted to the development of computer time-sharing and on-line techniques for processing and retrieving scientific and technical information.

1969 BUDGET ESTIMATE DESCRIPTION OF TECHNICAL SERVICES CATEGORY NASA HEADQUARTERS—Continued

[Dollars in thousands]

	1968	1969	Change
B. Scientific and technical informational and educational programs—Continued			
3. Educational/informational programs	$3,807	$3,940	$133
The Educational/informational programs are structured to carry out that part of the Space Act which directs the agency to disseminate information concerning its programs and activities, and their results. These programs seek to do this by collecting this information, and putting it into forms most suitable to the needs of teachers, students, and the general public, and to the needs of the news media. The programs, which are estimated to cost $3,940,000 in fiscal year 1969, are largely reactive; i.e., they respond to the expressed demands. The increase of $133,000 in fiscal year 1969 is required because of increases in contractor salaries, the cost of the production of science-oriented filmstrips and associated teacher guides, the cost of design services due to the increased complexity of the design requirements of items to be procured, and in the cost of film storage related to the larger inventory.			
Various media are used to pass on to elementary and secondary schools the new knowledge being acquired by NASA; knowledge which ordinarily would not be available in classroom texts for another 3 to 5 years. One of the most effective and unique of these is the spacemobile program, which uses lecture-demonstrations before school audiences. Lecturers are experienced science teachers who periodically are given concentrated briefings on NASA programs and results, and who are kept up-to-date by continual contact with a particular NASA center. These men come into direct contact with students and with their teachers, in auditoriums and in classroom visits as well. During the summer, they work with teachers and teacher-training institutions, in science workshops. Last year, the program provided 11,000 lecture-demonstrations put on by lecturers who are contract employees.			
Other parts of the programs for schools and the general public include preparation and publication of space-related material organized by discipline and grade level. To supplement and enrich school courses, these curriculum materials are used by teachers. Also, preparation, production and distribution of publications, motion pictures, educational television and radio material, career guidance, information; and design construction, and display of exhibits. Increased costs are expected to result for design and construction of exhibits owing to the difficult problems presented in depiciting areas such as advanced research and technology, life sciences, and propulsion. In fiscal year 1969, the renewal of manned flights is expected to generate additional motion picture footage, and increased demands for loans of films.			
The needs of the news media are served by providing comprehensive background information in press kits and by rapid announcement of new information through news releases and news conferences. All NASA launch and mission events are open to the news media, and supporting these operations requires extensive preparation and additional expense which must be borne by NASA. Making information available in forms suitable for use by news media entails its preparation in feature form for newspapers and other printed periodicals and for television and radio. These forms include columnar copy, halftone and line illustrations; black and white glossy photographic prints and color transparencies; magnetic tape and motion picture film.			
Total, technical services	12,600	12,920	320

HEADQUARTERS PERSONNEL

Mr. EVINS. Look at the Administrator's headquarters. We notice in every one of the bracket frames there is no increase in personnel. They are all the same. The summary is 2,279, the same as last year.

What is the function of your Headquarters Communications Center?

Mr. WEBB. This is where all the mail and telegrams and communications come in for control throughout the organization; receipt and dispatch of comunications.

AD HOC COMMITTEES

Mr. EVINS. Then you have a couple of ad hoc committees with no personnel costs.

Mr. WEBB. Yes, sir. There is no personnel there.

Mr. EVINS. What is the nature of these committees?

Mr. WEBB. Mr. Chairman, what we have here is created under Mr. Gorman, who is Dr. von Braun's administrative deputy. It is a group of NASA people to examine the major policy problems of our civil service management from the top level. We do this frequently when we have a problem. Just as we have in the next box "Aerospace Safety Interim Working Group." This is a group that examines all the problems of setting up the Safety Review Panel which the Congress wrote into law last year.

In respect to management and development, we are now revising our organizational structure substantially as the workload is changing. It has been recommended by the President's Science Adviser and his Committee that we not maintain a separate Office of Manned Space Flight, but have a mission office that does all flying. This is the kind of examination we do with ad hoc groups and with groups from outside.

Mr. EVINS. These are counseling and advising committees?

Mr. WEBB. Yes, sir; and for continuing examination of a problem for a period of perhaps 6 months. Mr. Gorman is going through our Centers holding hearings. They will give us specific recommendations as to how we meet certain requirements of the Civil Service Commission in the new period.

Mr. EVINS. Do these committees review your programs or just the organization?

OUTSIDE REVIEW COMMITTEES

Mr. WEBB. Now, the committees that review our programs are the Space Science Board of the National Academy of Sciences; the Aerospace Engineering Board of the National Academy of Engineering; and a new Panel on Management Review by the National Academy of Public Administration. Those are three areas—science, engineering, and management—where we have outside committees primarily concerned at the top side.

We have a Lunar and Planetary Missions Board that works directly with the problems in that area. It makes projections for the future. It reviews the proposals going through for approval in our management structure so as to match its idea of what the Nation should be doing in 10 or 15 years with what we actually are processing for approval. We have those kinds of program review committees.

We have a number in the field of aeronautics that have been in existence since the days of NACA in which industry, university, and Government people review propulsion problems, materials, and structures problems.

CONSOLIDATION OF OFFICES

Mr. EVINS. We understood the Administrator to testify they were considering the suggestion of consolidating the manned space flight and your space applications into one missions group.

Mr. WEBB. I use that as an illustration, Mr. Chairman, of the kinds of problems we are dealing with. I am certain we are not going to want to do that until we at least get the Apollo flights behind us.

Inquiring into how astronomy should be done in space, whether manned or unmanned, is the kind of thing we will be considering as we finish the Apollo flights and look to the future organization.

OTHER HEADQUARTERS OFFICES

Mr. Evins. Mr. Administrator, we notice you have an industry affairs division, university affairs, international affairs, legislative affairs, and public affairs.

Do you think you need all these public affairs people, 109?

Mr. Webb. Yes, sir.

Let me point out, Mr. Chairman, that with respect to the field of industry affairs, this office monitors and checks the policy and reviews the major procurements of the agency which are very large in volume.

SPECIAL CONTRACTS NEGOTIATION AND REVIEW

In the special contracts negotiation and review office, we have settled about $2 billion worth of work at North American-Rockwell's space division and have contracted for about $800 million of future work. We are constantly having to review and change major contracts.

Mr. Evins. It looks like with just four personnel reviewing all the billions of dollars of contracts, that you are a little understaffed there.

Mr. Webb. The procurement is actually done in the centers under a decentralized set up.

Mr. Evins. This is another level of review?

Mr. Webb. Yes, sir, one primarily related to policy and to auditing all the major contracting provisions——

Mr. Evins. Does this office make suggestions to the Renegotiation Board?

Mr. Webb. Generally what happens there is that the Renegotiation Board will ask us for agency opinions, views or reports. These requests usually come into Mr. Finger's office for certain types of information. On the procurement side they would come to the Office of Industry Affairs.

Now, if it related to a matter being specifically handled under the Office of Special Contracts Negotiation and Review which is responsible for our large contracts, such as North American-Rockwell, it would go to that office.

Mr. Evins. You are testifying that all these contracts are reviewed where the contracting officer makes them and if there is any irregularity the super review board looks it over?

Mr. Webb. All contracts above a certain level must pass through the Office of Industry Affairs before final approval. This office also generates and approves a procurement plan under which the contracting officer must work. So you have a pattern to which the field organization is working and then the final action that they propose to take also comes through headquarters for approval.

Mr. Evins. The Special Review Board is not over the industry affairs?

Mr. Webb. I am sorry. I thought you were speaking of industry affairs.

The special contracts negotiation and review officer deals only with special matters that are assigned to him. If we have an indication of industrial espionage where there is procurement going on or we have a complaint by one company that industrial espionage is being used unfairly against it, we will lift it out of the routine of procure-

ment and put it under this officer and say, "Now, everything is going to be handled by him" and that has an automatic, salutary effect on the whole system.

OFFICE OF UNIVERSITY AFFAIRS

Mr. EVINS. The university support program has been reduced substantially over the past several years because of the budgetary deficiency and other reasons, but your staff remains the same; 54. You have to keep good relations with the universities.

Mr. WEBB. This office is also in an area of transition. As we were building up both the sustaining university program and the manpower reserve, the sustaining university program rose to about $45 million and the total NASA university program rose to nearly $130 million. It was necessary to maintain an overall view of all of this. Now that the program is going down and adjustments are being made, the actual writing of the contracts and the negotiation for them is being transferred out of university affairs over into the procurement office, so that it will go along just like the industry affairs matters. But we are examining now how the engineering education that we are doing on a pilot model basis goes forward with a team training, with masters and doctoral candidates in different schools, for example, building a radar machine to be used on the surface of the moon.

This office is still involved with the project approval which is still about $85 million, even though the sustaining university program has gone down to $10 million and these newer programs, such as those in management, where we are sponsoring graduate work, are being done in public administration.

Mr. EVINS. The university grants program by no means represents all of the university support?

Mr. WEBB. No, sir. But all of the university support from every part of NASA is monitored by this office and looked at as a whole.

In university affairs, $10 million represents only the sustaining university program.

There is about $85 million of project research that goes out through our centers and other program offices.

The overall policy supervision of that is set and monitered by the office of university affairs. Mr. Truszynski is here for the tracking and data acquisition offices. He is the new associate administrator for that office.

Mr. EVINS. I think we ought to hear from the new administrator. What do you project and what do you aspire to accomplish next year?

TRACKING AND DATA ACQUISITION

Mr. TRUSZYNSKI. As you know, the tracking and data acquisition program is a continuing program in NASA in that it is required to support all the various flight programs. We have been building a network capability for the support of Apollo. We have basically completed this construction phase of the tracking systems that we will be using in support of the manned flights, and for the immediate future, as far as the manned flight program is concerned, we have reached a plateau in terms of any additional stations required.

Mr. EVINS. How many tracking systems do you have in NASA?

Mr. TRUSZYNSKI. We have 26 stations located in 15 countries including the United States.

Mr. EVINS. 26 stations? I think I saw somewhere in your budget that you have three different systems?

Mr. TRUSZYNSKI. Yes, sir. These stations are divided.

One for manned, one for unmanned scientific satellites, and one for deep space.

Mr. EVINS. You have to have a different system for each type of launching.

Mr. TRUSZYNSKI. Yes. The kinds of programs are quite varied. They range from the manned programs——

Mr. EVINS. The manned programs are the ones that involve safety. We want to see that they successfully complete their mission. But you lose contact with some of the unmanned, don't you?

Mr. TRUSZYNSKI. Yes; we do. We maintain contact at periodic intervals as the satellites come over the stations to receive the data and to control the spacecraft. For the deep space programs we require continuous contact to extreme distances, many hundreds of millions of miles. So this requires quite a different kind of tracking system.

SPEED OF COMMUNICATIONS

Mr. EVINS. How fast can your communications center either here in Washington or Houston get information from your 26 stations?

Mr. TRUSZYNSKI. We receive information as it is being generated. So it is in real time in this case. As the spacecraft is flying over the station the Houston control center can talk to the astronaut.

Mr. WEBB. Mr. Chairman, if we are not in communication, say we needed to reach Madagascar, we could reach them in half the time that it takes for a local call. The automatic switching system would put you through in 7 seconds to Madagascar. If the circuits were busy on one side of the world, it would switch you around the other way.

Mr. EVINS. This is a type of in-house direct communications with your stations?

VALUE OF COMMUNICATIONS SYSTEM

Mr. WEBB. Yes, sir, for the reason that we must maintain control of these very fast moving spacecraft from one point. We cannot transfer control as the spacecraft moves. We have to keep a network that keeps that one point of control in charge of the whole operation. I would like to say one thing. You have been interested in what benefits come from this program. We use 25 contractors around the world to install and operate this network. They may be British, or Australian, or a private contractor like Bendix or RCA. We had to have automatic monitoring equipment so that if the telemetered data begins to deteriorate on one circuit, it switches to another, and we don't lose the data. The spacecraft is moving very fast. So we have automatic monitoring. The instant the circuit goes bad the signal is switched to another. There are automatic switchings, and high speed equipment at the end of the line. These contractors are now installing this on other communications systems around the world.

A.T. & T. will rent one of these equipments for $3,500 a month. Some companies find it economical to rent them.

So the whole communication system of the earth is worth several times more in terms of the traffic it can handle today than a few years ago.

OTHER USES OF NETWORK

Mr. EVINS. What other uses, aside from when an astronaut is in flight, do these stations have?

Mr. WEBB. These stations are used far more than just the time they are flying. Every exercise must be simulated many times before it is flown.

Further, we do what you have suggested with respect to our communication satellites. We paid Comsat Corporation for the services. They then sell the time not required by us and reduce our price by the amount of the sales. So we are doing the kind of thing you mentioned with respect to the communication satellite system.

Mr. EVINS. We will talk a little more about tracking later.

EXPANSION OF AIRPORT AT MAURITIUS

Mr. JONAS. I read in the Washington Post editorial yesterday that a new country joined the company of nations in the last few weeks and the United States is getting ready to extend the runway at the airport. It said that the purpose of it was to make some parking space available for search and rescue airplanes that would be parked there to provide some protection for astronauts who go and come from the moon. The Washington Post editorial called that a zany operation. Will you comment? Are you getting ready to fund that airport expansion?

Mr. TRUSZYNSKI. There is a requirement to extend the parking apron at the commercial airport on Mauritius. The reason for this, as I think you know from last year's testimony, is that we have a requirement to support some of the Apollo flight propulsion maneuvers by the use of instrumented aircraft. These are the instrumented aircraft that will be deployed to cover these particular propulsion maneuvers while the Apollo spacecraft is in earth orbit. In order to provide this coverage, we have to deploy these aircraft to certain parts of the world so that they can in turn, as the mission time approaches, provide this coverage. I might point out that these aircraft are operated for NASA by the Air Force. In the course of working out the entire operational plan, it was decided that any requirements for augmentation at U.S. military airfields should be conducted by the Air Force. In the absence of a U.S. military airfield, any improvement such as the staging area would be funded by NASA.

In the area of the Indian Ocean, there is no military base usable, so we have to plan on the use of the commercial airfield at Mauritius. It is a small field and we will have three aircraft deployed there. The purpose of the expansion of the parking apron is to provide room for these aircraft to deploy there.

Mr. JONAS. Would NASA pay for this expansion?

Mr. TRUSZYNSKI. NASA would pay for this expansion.

Mr. JONAS. The implication from the editorial that this is a clever way of concealing an airbase is not true?

Mr. WEBB. It is not true, sir. These are large aircraft of the KC–135, 707 type, that are packed full of instruments, so that if we have to

inject toward the moon or bring back from the moon spacecraft in a different orbit than the preplanned ones over the ground stations or ship stations, we can send an airplane to the necessary place.

Mr. JONAS. This has been in the plans for some time.

Mr. WEBB. That is right. The airplanes are finished.

Mr. JONAS. The expansion of the airfield?

Mr. WEBB. It has been in our plan for 3 years or so to use that airfield.

Mr. JONAS. What arrangement do you have with Mauritius? Previously you had the arrangements made with Britain?

Mr. TRUSZYNSKI. Yes.

Mr. JONAS. For use of the airfield?

Mr. TRUSZYNSKI. We have had discussions with the Mauritians and the British over the past 3 years.

Mr. JONAS. Do you pay the rent?

Mr. TRUSZYNSKI. No, there will be no rent required. The only requirement is the staging area.

Mr. JONAS. The improvement of the airfield will revert to their benefit after we finish using it.

Mr. TRUSZYNSKI. Yes, it will.

Mr. TALCOTT. What kind of tenure do we have? Can we be kicked off at any time?

Mr. TRUSZYNSKI. No. There is an agreement under final negotiation that would provide for the use of this parking apron for a number of years. This is on the order of 10 years.

Mr. TALCOTT. Does the agreement preclude military use of the base?

Mr. TRUSZYNSKI. The agreement is silent on military use.

Mr. WEBB. There may be another agreement between the respective Governments, but our agreement does not cover military use, although the military will be flying these airplanes. They are responsible for flying all eight of the airplanes for our needs.

We specify where we need them, when we want them, and they provide them just as they provide the ships. We do not run the ships.

Mr. TRUSZYNSKI. Again this is an improvement to the commercial airfield. It is not a military field.

Mr. JONAS. The extent of the construction will merely be the expansion of the runway and the building of the apron.

Mr. TRUSZYNSKI. Merely the apron.

Mr. JONAS. What about hangars and support facilities? Are they already there?

SUPPORT FACILITIES

Mr. TRUSZYNSKI. No, sir; we do not have a requirement for hangers. Fueling capability is already there. This is a staging area that the aircraft will fly into to allow instrumentation checks and return to other areas.

Mr. JONAS. I assume they will not be there permanently? They will fly into this field when alerted by you that they will be required?

Mr. WEBB. Yes, they will be there for the time they might be required. They may not be required. Then they will depart and go to another place.

Mr. JONAS. That will eliminate the requirement for any permanent support facilities there.

Mr. WEBB. Yes, sir.

JET PROPULSION LABORATORY

Mr. EVINS. As part of the headquarters office, the Jet Propulsion Laboratory is shown, and you state in your justifications that this information is provided for information only and should not be considered a part of NASA's 1969 operating budget. However, the cost is $75,574,000. Why should it not be considered part of NASA's budget?

Mr. LILLY. It should not be considered. It is not included in the administrative operations portion of the budget. It is a research and development contract.

Mr. EVINS. It is not administrative costs, but the $75.5 million is included in your research and development appropriation?

COSTS INCLUDED IN R. & D. BUDGET

Mr. LILLY. Yes. It is included in the research and development budget.

Mr. EVINS. The plant is Government-owned, and is managed by the California Institute of Technology under contract with NASA. You point out the mission. Under orders from NASA, JPL performs a variety of engineering and management missions: One, lunar and deep space scientific exploration; two, project management of complete spacecraft systems; three, tracking, data acquisition, and data reduction and analysis required by lunar and deep-space flights. This looks like it is a little NASA all within its own. They can do everything from beginning to end.

Mr. WEBB. They are the contract operators of the deep space network. One of the three networks is operated by the Jet Propulsion Laboratory under contract with us.

Mr. EVINS. They do planetary exploration, deep space exploration, and tracking and data acquisition.

WORK ON RANGER, SURVEYOR, MARINER

Mr. WEBB. We made the contractual arrangements with them to build the Ranger and the Surveyor and Mariner spacecraft, the first two for the moon and the latter spacecraft for the planetary work. We had Langley Field manage the Lunar Orbiter. JPL is the specialist in this area and the main reliance of the U.S. They conducted a very successful program with Surveyor. We were discussing the results of the digging mechanism this morning. Right now we are working with them to orient themselves toward a closer scientific role with all the universities concerned.

Mr. EVINS. I commend you for this contract operation. However, it was at one time one of your major facilities. You have consolidated two into one, which is under a contract, so you have reduced your facilities.

JPL TRANSFERRED TO NASA FROM ARMY

Mr. WEBB. This has always been contract. This was operated by Cal Tech for the Army. It was transferred to NASA after the 1958 Act came into effect and has been operated as a contract laboratory all the time.

Mr. EVINS. It is one of your better ones; is it not?

Mr. WEBB. Yes, sir; they are doing an excellent job.

Mr. TALCOTT. What happens if they do not do an excellent job? How can you get rid of them? Even if you were terribly dissatisfied with JPL you could not get rid of them, because it is such a big operation.

EVALUATION OF JPL PERFORMANCE

Mr. WEBB. This is one of those areas of real difficulty that arose as a result of the ballistic missile program which required the Government to bring into play things like space technology laboratories, the later created Aerospace Corp., and the Lincoln Laboratory. All of this is constantly reviewed. We have written a new form of contract with Cal Tech under which we rate their performance every 6 months in the most important areas: scientific, technical, and from the standpoint of management. Then we have a direct confrontation across the table in which we expose to them our evaluation of their work and give them a chance to comment.

The amount of fee they receive for the next performance period is dependent on our rating of their past performance. This is not a perfect arrangement. Universities are deeply concerned about having research work evaluated by anyone except the researchers, the scientists. It is an extremely difficult area. You are absolutely correct about that. We are evolving ways that we believe will bring us forward, in about 3 to 5 years to an arrangement beyond what we have now.

Mr. EVINS. You give them close supervision.

UNIVERSITY INVOLVEMENT WITH JPL

Mr. WEBB. Yes, sir. This committee was pretty unhappy with the operation of the Rangers when we had five failures in a row. You remember we were sharply questioned here about that. I think we have made very, very real progress. Dr. Naugle was out there about 10 days ago for the last rating. We asked Roger Heyns, who is chancellor of the University of California at Berkeley, to look ahead 10 years to how we can work with universities in the area of big payloads, where the universities have to commit themselves for several years in order to get on with the payload experiments. Dr. Heyns went down and sat through this procedure. We are steadily bringing in more people to make JPL serve a broader national interest and not be simply a one-university laboratory.

Mr. TALCOTT. Is JPL subject to renegotiation like other contractors are?

Mr. WEBB. No, sir; I believe not, because they are a nonprofit corporation. Our fee to them is a straight management fee.

JPL RECORD

Mr. EVINS. I think the record has been impressive. By the end of 1967 six Surveyor spacecraft had been launched, four of which had successfully soft-landed on the Moon. No other facility has done that; has it?

Mr. WEBB. No, sir; it is an extremely successful program.

Mr. EVINS. The last Surveyor was launched January 1968.

Dr. NAUGLE. This landed on the surface of the Moon.

Mr. WEBB. It landed in one corner away from the mainstream.

Mr. EVINS. Surveyors have returned several thousand photographs of selected areas of the Moon.

Mr. TALCOTT. If we are not up with the Russians on these matters it is really JPL's fault. They have had more money than the Russians.

Mr. WEBB. The Russians did the first soft landing but their machine did not return nearly the value of the data which we got from the Surveyors, although the Surveyors came after the first landing by the Russians and the discussions were able to create the spectacular image that they were first.

Mr. TALCOTT. Do you believe JPL is doing a better job for the money than the Russians are doing?

Mr. WEBB. Yes; I do. In the areas of advanced technology I think they are outstanding.

Mr. TALCOTT. But they are the only ones in this particular area except the Russians.

CAPABILITIES IN OTHER NASA CENTERS

Mr. WEBB. No, sir. Two or three years ago JPL was the only facility in the United States that could handle massive amounts of data in real time. We went to Goddard with the Nimbus operation 5 years ago. This requires the same type of ability to handle massive amounts of data on a computer plan and have it instantaneously available. This is the Weather-Earth Observation Satellite. We went to Langley Field and developed the same capability for the Lunar Orbiter. Now we have three places that can do this kind of work.

Mr. TALCOTT. You believe JPL is outstanding among these.

Mr. WEBB. I believe they are outstanding in their fields. I think they are not yet as responsive to the requirements of management as we would like them to be. Their ratings in our management evaluations are lower in the management field than they are in these technical and scientific fields.

Mr. EVINS. In the technical and scientific fields they are superior, but in management they need a little improvement?

Mr. TALCOTT. You would expect that from a university.

AVAILABILITY OF JPL TO SCIENTISTS

Mr. WEBB. This is one of the problems in dealing with universities. But I expect a university to do the job they undertake under contract. I would like to say one other thing that is very important to the west coast. The capability of JPL will be readily and easily available to the scientists who are going to develop the newer, bigger systems that will

fly on our larger rockets. Until now this has tended to be a little more of an in-house, isolated operation rather than being closely integrated with graduate and postgraduate education even on the campus at Cal Tech. It is opening up now. They need more very high level scientific capability in the laboratory. I think that is the next major development.

Mr. TALCOTT. Does JPL have other contracts or do you have the exclusive contract with them?

FUNDING FROM OTHER SOURCES

Mr. WEBB. They do not have other contracts at this time. We are considering receiving some funding from the National Institutes of Health, which we would add to our own funding to take some of our space instrumentation and use it for instrumentation for medical purposes. There are a number of cases like that where they might work on things that are not altogether NASA business. We have worked very closely in this regard. Some other agencies might wish to fund them. We have this question up right now, whether it would be wise for them to have contracts with several agencies.

This becomes difficult for management purposes.

Mr. JONAS. Do you know if they have any contract with FAA?

Mr. WEBB. I do not know of any with FAA. I do know that they are working on problems under our funds. Mr. Jonas, the arrangement provides that something like a fourth to a third of their effort is on advanced research and development things that we and they agree are important. Some of those areas are related to matters of interest to the FAA, but they are not specific projects where FAA says, "We want this research done."

Mr. EVINS. You indicate in your justification that the Lunar Orbiter program provided photographic coverage of the entire lunar surface at a level of detail 10 times greater than that obtainable from Earth-based observations.

Mr. WEBB. I said a million times in terms of both the Ranger and the Surveyor, Mr. Chairman. A million times more detail of the object observed at the base of the Surveyor.

ACCOMPLISHMENTS OF MARINER 5

Mr. EVINS. That is very impressive. The Mariner-V was launched in June 1967, and 4 months later passed within 2,131 miles of Venus, providing information on the atmospheric composition of the planet and other specifics. What are the other specifics?

Dr. NAUGLE. On this mission it showed that the magnetic field of the planet Venus was very small. This was the first time that we had really detected any magnetic field from a planet other than the planet Earth. There was a weak magnetic field detected by Mariner V. We do not know yet whether that field was so weak that it could be explained either as a field generated by the planet itself in a way similar to the Earth's field, or it could be a field that is produced by the flow of the gases from the Sun as they flow around the planet.

That is something that has to be checked out. There were instru-

ments on there to look for trapped radiation belts. There was no evidence of such belts found. We measured the composition of the upper atmosphere of the planet. We flew by the planet and we measured the attenuation of the radio signal from the Earth as the spacecraft flew behind the planet.

Mr. EVINS. How much could you get from 2,000 miles away?

Dr. NAUGLE. You get a tremendous amount of information through this. We also detected the ionospheric properties of the planet and measured them. Our signals were completely obscured by the atmosphere of the planet before we got down to the surface of the planet.

We could tell that the surface pressure at the point where our signals were attenuated was about 10 to 15 times the surface pressure on the Earth here. Venus has a very hot, very heavy atmosphere in comparison to the Earth.

FUTURE PLANETARY MISSIONS

Mr. EVINS. You are going to have two more fly by missions this year. What are you projecting to produce in 1969?

Dr. NAUGLE. The 1969 flights will go by Mars.

VENUS PROJECT

Mr. EVINS. Are you going to abandon Venus?

Dr. NAUGLE. No, sir. There are still many interesting questions about Venus. There are opportunities to study Venus in 1970 and 1972 and then again in late 1974 or early 1975. The opportunities for Mars come in 1969, 1971, 1973. We have given the exploration of Mars priority. So we have missions to Mars in 1969, 1971, and 1973. Within the resources available, we cannot go to Venus in 1970.

When we begin to have a feeling what the support of Congress is for the planetary program, and as we begin to see what resources the country can put into the planetary program, we will assess what additional missions we want to propose in the next fiscal year.

In 1970 there are at least two options that we will be examining throughout this year. We will be looking to see whether we want to fly an orbiter to Venus in 1972. It would be a very tight program because of having to wait until 1970 to begin. We will also be looking at an opportunity which occurs in 1973 in which we would take a spacecraft fly it by Venus, and deflect it as it goes by Venus so that it will go inward toward the Sun and fly past the planet Mercury. So with a single spacecraft you would take pictures of the surface or the cloud cover of Venus and then go on and visit Mercury to get the first pictures of that planet as well as the first exploratory data in its vicinity. Those are a couple of the other planetary options we will be looking at.

Mr. EVINS. Your contracts with JPL specify so many flights per year. Is this the way it is programed?

MARS 1971 PROJECT

Dr. NAUGLE. If Congress approves the 1971 orbiter Mars mission, we plan to ask JPL to act as project manager. As soon as we have the assurance that Congress is going to approve it, and the President feels

that he can authorize us to go ahead with it, we will negotiate or sign a task order to JPL in which we will agree on the number of people and the total dollar value of that task. That will be added to the contract as a specific task for that mission.

Cal Tech and the Jet Propulsion Lab will be responsible for preparing that mission.

Mr. WEBB. Mr. Chairman, you mentioned Venus. I think it is important to recognize that a number of scientists believe that Venus is being neglected. From your question, I judge some of them have been to see you.

Mr. EVINS. I do not know that they are feeling any lonesomeness up there. They are happy in orbit. It is the Earth scientists that are disturbing them.

Mr. WEBB. We could not have gone with a 1970 program for Venus without anticipating the decision of this committee, without making advance money available.

We chose to wait for the Congress to make its full decision and to fly to Mars in 1971. This makes sure that as we reach these decisions we are both firmly together. So we are steadily putting further into the future the initiation of projects in order to make sure there is agreement between the legislative and the executive branches before anything is started.

Mr. EVINS. Very good.

Mr. WEBB. This made some scientists a little unhappy, if I may say so, sir.

Mr. EVINS. Look at your chart on page 2–118. We see all the costs in this operation are down. I am doubly impressed when I see that the costs are going down and you are getting results. So it impresses me that private enterprise with a contract operation has made significant achievements.

NASA-JPL CONTRACT

Mr. MARSH. If the Chairman will yield, I would like to direct a few questions for the record in reference to JPL. Could you furnish us with a copy of the type of contract that you execute with them?

Mr. WEBB. We will be very happy to. You wish this for you own perusal or do you want to put it in the record? It is a long contract.

Mr. EVINS. Leave it for the committee for examination.

Mr. WEBB. Yes, sir.

(The requested information was supplied to the committee.)

ALLOCATION TO JPL FOR FISCAL YEAR 1969

Mr. MARSH. If you could sort of summarize what the contract consists of. Do you execute an agreement that you would fund them to the extent of $75 million for the fiscal year 1969?

Mr. WEBB. No, sir. The contract brings into play an arrangement under which they will take on work as specified by us if they regard it as within their capability and if they feel they can execute it. There is a certain amount of mutuality required. On the other hand, once they undertake a project they have to go forward with it.

Mr. MARSH. So what it boils down to is that you will allocate them $75 million of work this year?

Mr. WEBB. Yes.

Mr. MARSH. You have reduced the funding of JPL?

Mr. WEBB. In effect, we say if you approve this budget we will call on them to do the work and our estimate of what it will cost is $75 million.

Mr. MARSH. You assign their workload and you assign an estimated cost value of that and you request us to appropriate money to cover that workload you assign to them.

PAYMENT TO JPL

Mr. EVINS. At a lower level in the past year.

Mr. WEBB. That is right.

Mr. MARSH. We could reduce it more by reducing the workload that is assigned to them.

Mr. WEBB. If you reduce the budget we will not have the money to assign the work to them and they will not receive the pay.

Mr. MARSH. So you do not have to furnish them $75 million?

Mr. WEBB. No, sir. We will not obligate those funds until we have assurance that they are appropriated and are apportioned by the Director of the Budget for our use.

TOTAL JPL FUNDING

Dr. NAUGLE. It should be pointed out that this is not the total amount of work of JPL or the total amount of money that goes to JPL. The total funding for JPL in fiscal year 1968 will be of the order of $200 million.

Mr. MARSH. Because of previous work or what is in the pipeline?

Dr. NAUGLE. No. A part of this $75 million is a part of that $200 million.

Mr. MARSH. The $200 million is from work that you previously agreed to, either the year preceding or the year following.

Mr. WEBB. Some will go to Hughes Aircraft for finishing up the Surveyor work. In other words, this $75 million is the administrative budget, basically. The actual developmental and scientific workload, including the subcontractors they use is in the other part of the $200 million.

Mr. MARSH. In effect, JPL is going to be getting $200 million in fiscal year 1969.

Mr. WEBB. Yes, sir; as against $230 million 2 years ago. They are going down $30 million in 2 years.

Mr. MARSH. Is the $75 million included in the $200 million?

Mr. WEBB. Yes, sir.

LEASED ACREAGE AT JPL

Mr. MARSH. I notice that there is 14.3 acres of land. Who owns that?

Mr. LILLY. I believe that is owned by the city of Pasadena.

Mr. MARSH. Are there improvements on it?

Dr. NAUGLE. I think that is primarily parking lots.

Mr. MARSH. Do you have an option to buy it?

Mr. WEBB. I doubt that. It has been hard to obtain any land. This is a very crowded area.

Mr. MARSH. How long does the lease run?

Mr. WEBB. We own the 146 acres. We will have to supply information on the 14 acres for the record.

Mr. MARSH. Will you state for the record how long it runs, whether or not you have put improvements on it since you have leased it, whether or not you have an option to buy, whether or not you can remove your improvements if you do not have an option to buy?

Mr. WEBB. We will be happy to.

(The information follows:)

The 14.3 acre parcel of land referred to on page AO 2–108, volume IV of NASA fiscal year 1969 budget estimates, located in the Arroyo just east of the Jet Propulsion Laboratory, is owned by the city of Pasadena and leased by the California Institute of Technology until June 30, 1970. The improvement to the land consists of grading and surfacing to provide parking space for 1,500 automobiles. The nature of the improvements to this land are such that they can not be removed and reused at another location.

The present lease does not provide for an option to buy this land, and if the city of Pasadena does not renew the lease, NASA will have to develop alternate arrangements for JPL employee parking.

Mr. MARSH. JPL does not pay you any rent for the use of the facilities they use?

Mr. WEBB. No, sir. If they did, we would have to refund it to them under the contract. So we just furnish them the facilities.

Mr. MARSH. Have any of their funds gone into physical improvements that they can remove?

Mr. WEBB. None.

Mr. MARSH. Or equipment they can remove?

Mr. WEBB. None.

Mr. MARSH. We retain ownership of all of those?

Mr. WEBB. Yes, sir.

Mr. MARSH. Thank you, Mr. Chairman.

PERIOD OF EXPENDITURE OF $75 MILLION

Mr. TALCOTT. Some of the $75 million that you are asking for this year will probably be for contract work which will take maybe 2 years in some instances and maybe 4 years in other instances. The $75 million will not all be spent in this fiscal year.

Mr. LILLY. Mr. Talcott, the total contractural effort with Cal Tech for the operation of the Jet Propulsion Lab is funded out of the research and development budget, within the lunar and planetary exploration program. That contract is for $200 million. Since its function is similar to our own centers, and since this committee and others have wanted some form of comparison, we have included these data so that JPL can be put in the same context as our NASA Centers. The funding is not under Administrative Operations but it is within the total $200 million contract. The data shown provide a comparative basis by showing the number of people and the amounts of money going into the same kind of things that we budget for our centers.

Mr. JONAS. Actually you put it behind the Central Office. It is an attachment to the administrative budget for information.

Mr. WEBB. That is right.

LITTLE FORWARD FUNDING

Mr. LILLY. To answer your question—Will this money be spent in the fiscal year in which it is budgeted—yes, sir, it will. Some of the other parts of the $200 million go out on contracts with contractors, and a certain amount of that work will not be performed at the end of that particular fiscal year. However, there is very little forward funding in that contract.

Mr. JONAS. This would include in-house R. & D.

Mr. WEBB. That is right.

Mr. JONAS. But not outside.

Mr. WEBB. That is right.

Mr. TALCOTT. Do you contract with JPL for projects in the future for which you do not have money?

Mr. WEBB. No, sir.

JPL JUSTIFICATION MATERIAL

Mr. EVINS. Total personnel is 4,150. It is the same as last year and declining from the preceding year. The Federal investment is $148 million. We will place AO2–106, AO2–107, AO2–108, and AO2–109 in the record.

(The pages follow:)

JET PROPULSION LABORATORY—ADMINISTRATIVE OPERATIONS, FISCAL YEAR 1969 ESTIMATES

This presentation of administrative operations-type costs at the Jet Propulsion Laboratory is for information only and should not be considered a part of NASA's fiscal year 1969 administrative operations budget estimates.

Although the plant and equipment are entirely Government-owned, the Jet Propulsion Laboratory is managed and staffed by the California Institute of Technology under a contract with NASA. Because it is a contractor operation, the cost of operating Jet Propulsion Laboratory is funded almost entirely from the research and development appropriation. Cost of leasing administrative aircraft and purchase of passenger motor vehicles are funded from the administrative operations appropriation and are included in the NASA Headquarters budget.

MISSION

Under task orders issued by NASA, the Jet Propulsion Laboratory performs a variety of engineering, scientific, and management missions which include:

1. Lunar and deep-space automated scientific exploration.
2. Project management of complete spacecraft systems.
3. Tracking, data acquisition, and data reduction and analysis required by lunar and deep-space flights.
4. Conduct a program of supporting research and technology.

Specific examples of the Jet Propulsion Laboratory's activity in these areas are:

Lunar exploration.—By the end of 1967, six Surveyor spacecraft had been launched, four of which successfully softlanded on the moon. The last Surveyor was successfully launched on January 7, 1968. Surveyors have returned several thousands of photographs of selected areas of the moon's topography, and have established that the weight bearing capacity of the lunar surface is sufficient to permit a safe landing by Apollo astronauts, and have provided vast quantities of other engineering and scientific data. This highly successful spacecraft was designed and developed by Hughes Aircraft Co. under a contract with Jet Propulsion Laboratory. The Jet Propulsion Laboratory managed the contract and provided technical guidance, conducted the missions from the space flight operations facility, and reduced and evaluated scientific and engineering data received.

During the past 2 years, Jet Propulsion Laboratory has also been deeply involved in the conduct of the lunar orbiter flight project which was managed

by the Langley Research Center. Conduct of the five flight missions was accomplished from Jet Propulsion Laboratory's space flight operations facility, while tracking and data acquisition was performed by the deep space network. The lunar orbiter program, now completed, has provided us with photographic coverage of the entire lunar surface at a level of detail 10 times greater than that attainable from earth-based observations.

Planetary exploration.—Jet Propulsion Laboratory has project management responsibility for Mariner, our primary instrument of planetary exploration. This series of spacecraft was designed at the Jet Propulsion Laboratory, which is also responsible for integration, assembly, and testing of the spacecraft. Mariner II accomplished the first successful flyby of Venus in 1962, and in 1965, Mariner IV photographed the surface of Mars as it passed within 6,200 miles of the planet's surface. Mariner V was launched in June 1967 and 4 months later passed within 2,131 miles of Venus providing information on the atmospheric composition of the planet and other scientific data. Two more Mariner flyby missions to Mars are planned for 1969. Also, work on two Mariner Mars 1971 orbiter missions and two Titan Mars 1973 missions with probes will begin in 1969.

Supporting research and technology.—The Jet Propulsion Laboratory maintains a strong program of supporting research and technology and advanced development. Much of the knowledge being generated by this research will no doubt find application in the solution of future problems in space exploration. Active research in such areas as fluid physics ,electrophysics, materials, applied mathematics, and guidance and control is underway.

Another activity of considerable importance is the development and fabrication of scientific experiments to be flown on vehicles other than Jet Propulsion Laboratory spacecraft. These have included high-altitude balloons, Aerobee rockets, NASA aircraft, and earth orbiters. The scientific teams involved in these experiments frequently include faculty members of various universities and staff members from NASA field installations.

Tracking and data acquisition.—The Jet Propulsion Laboratory manages the operation of the worldwide deep space network. The deep space network is comprised of tracking and data acquisition stations located around the world and the space flight operations facility in Pasadena. The space flight operations facility is the central communications and control facility during the conduct of flight missions. Not only does the deep space network provide support to Jet Propulsion Laboratory flight missions such as Surveyor and Mariner, but it also provides tracking and data acquisition for projects such as lunar orbiter and Pioneer which are managed by other NASA field installations.

DESCRIPTION

The Jet Propulsion Laboratory is located in Pasadena, Cailf., approximately 20 miles north of downtown Los Angeles. Subsidiary facilities are located at Goldstone, Calif. (tracking and data acquisition), Edwards Air Force Base, Muroc, Calif. (solid-propellant formulation and testing), and Table Mountain, Calif. (open-air testing and astronomy).

At Pasadena, the Laboratory occupies 160.2 acres of land of which 145.9 acres are owned by NASA and 14.3 acres are leased. At Goldstone, facilities are located on land occupied under permit from the Army. At Edwards Air Force Base, facilities are located on land occupied under permit from the Air Force. The facilities at Table Mountain are located on land occupied under permit from the Forest Service of the Department of Agriculture. The capital investment of the Jet Propulsion Laboratory, including work in progress and contractor-held facilities, as of June 30, 1967, is $148,271,000.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1967	1968	1969
Personnel	$56,139,000	$59,380,000	$59,023,000
Travel	2,758,000	2,450,000	2,350,000
Automatic data processing	6,468,000	5,582,000	4,137,000
Facilities services	6,854,000	5,719,000	5,710,000
Technical services	1,587,000	1,282,000	1,145,000
Administrative support	3,928,000	3,370,000	3,209,000
Total, fund requirements	77,734,000	77,783,000	75,574,000

PERSONNEL

	1967	1968	1969
1. Permanent positions by program:			
Lunar and planetary	1,186	880	884
Tracking and data acquisition	358	348	312
Supporting research and technology	698	735	774
Research and development services	474	482	475
Subtotal, positions by program	2,716	2,445	2,445
2. Support positions	1,934	1,705	1,705
Total, permanent positions	4,650	4,150	4,150

MANAGEMENT FEE FOR JPL

Mr. MARSH. What would you estimate the profit would be on that contract? Do you build in a profit each year?

Mr. WEBB. It is not a profit. It is a management fee that runs between a million and a half and two and a half million a year.

Mr. MARSH. Not quite 1 percent.

Mr. WEBB. About 1 percent.

Mr. MARSH. They do this work exclusively for you and for no other people or outside firms or nongovernmental agencies.

Mr. WEBB. That is right.

Mr. MARSH. You get this work performed at roughly a managerial cost of 1 percent of your investment?

Mr. WEBB. Yes, sir; but we are paying the cost of administration that the university expends to do it. It is not quite comparable to a private company in that regard.

Mr. TALCOTT. And this is not like USC where the profit goes to pay for football teams and stadiums?

Mr. WEBB. No, sir.

Mr. JONAS. It is to great advantage to Cal Tech in addition to the management fee because it gives them a workshop.

RELATIONSHIP TO STUDENT TRAINING

Mr. WEBB. It is in my view, and in my view it should be more of a workshop than it has been.

You have to remember that Cal Tech is a relatively small institution as such institutions go. They are highly specialized. They have very outstanding people who pursue very specialized fields of interest.

We have felt that such a laboratory as JPL should be more closely integrated with the graduate training and the postgraduate training in some of these advanced fields. This is one of the continuing areas of concern that we express to them and which, in my opinion, has not yet been worked out to the greatest advantage of this arrangement. I do believe they gain considerable advantage from it in terms of the quantity of work, quality of work, the variety of work and the acceptance of the institution as a leader in the world as they succeed with things such as Surveyor.

Mr. EVINS. The committees of Congress recognize their ability. We want more achievements for the money expended, if this is attainable under good management. Do you want to tell us about the deep space network?

DEEP SPACE NETWORK

Mr. TRUSZYNSKI. Yes, sir. Mr. Chairman, as we mentioned before, the Deep Space Network is one of the three major networks we have in NASA. It is primarily concerned with the support of deep space missions and the lunar and planetary missions. This network has been managed for NASA by the Jet Propulsion Laboratory.

Mr. EVINS. This third one is managed by JPL?

Mr. TRUSZYNSKI. Yes, sir; it is. With their responsibility for the deep space programs, it was a natural responsibility to give them since it is in direct support of these lunar and planetary programs. They continue to manage this network for us.

LOCATION OF DSN STATIONS

Mr. EVINS. Where are the facilities of this network?

Mr. TRUSZYNSKI. This network is comprised of facilities at three geographical locations around the world. One location is in California; we have facilities in Australia; and we have facilities at two places in the third geographical area, at Madrid and South Africa. These are the stations that comprise the Deep Space Network.

Mr. EVINS. It is separate and distinct from your other two networks?

Mr. TRUSZYNSKI. Yes; it can be considered distinct and separate since it has a specialized responsibility for support of these extremely distant missions.

Mr. EVINS. How much does the Deep Space Network cost?

Mr. TRUSZYNSKI. The capital investment will be some $162 million at the end of fiscal year 1969.

ADDITIONAL 210-FOOT ANTENNAS

Mr. EVINS. I notice you have under various other facilities funds for a deep space antenna (210-foot facilities that will cost $17 million next year. Total, all years, $34,540,000.

Mr. WEBB. We built one of these 210-foot dishes at Goldstone, Calif. It increased the capability of the previously used 85-foot dish. We have now decided to ask for funds to locate the 210-foot dishes at the two other geographical locations over a period of years.

It does give you tremendously increased capability to receive information back from planetary distances. As we get larger spacecraft, they can work closer to the sun and farther out into the solar system. This has great leverage in terms of the value that can be derived from the missions.

CONSTRUCTION AT VARIOUS LOCATIONS

Mr. EVINS. Let's look at the construction at these various locations.

You are asking for $23,705,000 for next year. The first one detailed on CF 6–1 is repairs, rehabilitation, and improvements at various locations, $1,680,000.

Dr. MUELLER. Basically, from a total NASA standpoint we have some $600 million worth of facilities that are Government-owned facilities at various locations, such as at Edwards, Sacramento,

Downey, and Seal Beach. These are the funds required for repair and such rehabilitation and improvements as are characteristic of that large investment.

EDWARDS, CALIF.

Mr. EVINS. $180,000 at Edwards, what is that for, Dr. Mueller?

Dr. MUELLER. That in particular, if you look on page 6–3 is for repair of concrete aprons and deflector water channels at the base of the F–1 engine test stands, and replacement of approximately 2,400 linear feet of water distribution piping serving the test facilities.

SEAL BEACH, CALIF.

Mr. EVINS. The next item is, Seal Beach assembly facility, $392,000. What is that for?

Dr. MUELLER. That is for rehabilitation of the chemical processing system in the bulkhead fabrication building, and rehabilitation of the water conditioning plant.

SACRAMENTO, CALIF.

Mr. EVINS. You have another item for Sacramento Test Facility, $278,000. What is that for, Doctor?

Dr. MUELLER. That again is rehabilitation of the cryogenic transfer system, including overhaul of hydrogen and nitrogen vaporizers, replacement of pipe insulation and repair of the hydrogen burn ponds, rehabilitation of critical power systems serving ground support equipment, and overhaul of electrical and mechanical utility systems.

DOWNEY, CALIF.

Mr. EVINS. The NASA industrial plant at Downey, $150,000. What is that item for, Doctor?

Dr. MUELLER. That is for replacement of approximately 20,000 square feet of corrugated metal roofing, and improvement of the drainage system for the 660,000 square feet sawtooth roof of the manufacturing building.

CANOGA PARK AND SANTA SUSANA, CALIF.

Mr. EVINS. You have here Air Force industrial plants, Canoga Park and Santa Susana. What are they?

Dr. MUELLER. Those represent the factories that are used for the manufacture and test of the engines, F–1 and J–2 engines, and now we are moving the H–1 engines into these facilities.

AIR POLLUTION CONTROL FACILITY, DOWNEY, CALIF.

Mr. EVINS. Tell us about the next item, air pollution control facility, $350,000. Where is this facility?

Dr. MUELLER. This one is located at Downey, and it is part of the requirements of the Los Angeles County air pollution control regulations to control the discharge of organic solvents into the atmosphere.

We just simply have to install that in order to comply with the new laws or rules by the city of Los Angeles in connection with the abatement of air pollution there. They are trying to reduce the smog in Los Angeles.

Mr. EVINS. Can you reduce the cost of this facility?

Dr. MUELLER. Sir, it appears that is the minimum cost we can arrive at. We will do everything we can to reduce it, but I don't know that we can.

210-FOOT ANTENNAS

Mr. EVINS. $17,000,000 for the deep space antenna facilities for the next year. Which one will this accommodate?

Mr. TRUSZYNSKI. We plan to proceed with both of these antennas, starting in fiscal year 1969.

Mr. EVINS. What was the cost of the first one?

Mr. TRUSZYNSKI. The one that we have completed now was some $13 million for the antenna structure. We plan to spend about that same amount for these two, each of these two new antenna structures.

Mr. EVINS. What else are you getting for the $17 million?

Mr. TRUSZYNSKI. The $13 million represents only the antenna instrument cost. The $17 million requested includes the total cost for the construction work at the overseas locations such as the expansion of the existing operational support buildings.

Mr. EVINS. Are these to be built by contract?

Mr. TRUSZYNSKI. Yes, sir. They will be built by a U.S. contractor.

Mr. EVINS. Do you have any competition in this type of construction?

Mr. TRUSZYNSKI. Yes, we do. These will be competitive.

PHASED ARRAY ANTENNA SYSTEM

Mr. EVINS. You have another item of phased array antenna system, $2,880,000. What are these designed for?

Mr. TRUSZYNSKI. This is the antenna we described last year, a special antenna for support of the Sunblazer program. As you will recall, the Sunblazer program was deferred, and as a consequence we deferred the funding of this antenna until the Sunblazer program was reinstituted. It has now been included in the space science program and we are now requesting funding for this antenna.

POWERPLANT, FAIRBANKS, ALASKA

Mr. EVINS. The last item in this category is a powerplant replacement in Fairbanks, Alaska. It gets pretty cold up there, doesn't it?

Mr. TRUSZYNSKI. Yes, it does. Over the period of years we have increased incrementally the power system as we have added new facilities there. It has now reached a point where we feel it has to be refurbished to provide the proper reliability for this key station in the network.

JUSTIFICATION MATERIAL

Mr. EVINS. Mr. Reporter, place in the record CF 6-1, 6-2, 6-3, 6-4, 6-5, 6-12, 6-13, 6-15, 6-16, 6-17, 6-18, 6-23, 6-24, 6-26, and 6-27.

(The pages follow:)

[Dollars in thousands]

Project line item	Cognizant office	Fiscal year 1959 through current year	Fiscal year 1969 (estimated)	Future years (estimated)	Total all years (estimated)
Repairs, rehabilitation, and improvements at various locations	MSF	80	1,600		1,680
Air pollution control facility	MSF	19	350		369
Deep space antenna (210 foot) facilities	TDA	540	17,000	17,000	34,540
Phased array antenna system	TDA	60	2,880		2,940
Powerplant replacement, STADAN Facility, Fairbanks, Alaska	TDA	135	1,875		2,010
All other projects		643,905			
Total		644,739	23,705		

Repairs, Rehabilitation, and Improvements at Various Locations

Authorization line item: Various locations.
Program office for the project: Office of Manned Space Flight.
Location of project: Various locations.
Cognizant NASA installation: Marshall Space Flight Center/Manned Spacecraft Center.
Type of construction project: Rehabilitation and improvements.

Funding:

Fiscal year 1968 and prior years	$80,000
Fiscal year 1969 estimates	1,600,000
Total funding through fiscal year 1969	1,680,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction:				
Edwards Test Facility	Lump sum		$180,000	$180,000
Seal Beach Assembly Facility	do		392,000	392,000
Sacramento Test Facility	do		278,000	278,000
NASA Industrial Plant, Downey	do		150,000	150,000
Air Force industrial plants:				
Air Force plant No. 56, Canoga Park	do		380,000	380,000
Air Force Plant No. 57, Santa Susana	do		220,000	220,000
Equipment				
Design				
Fallout shelter (not feasible)				None
Total				1,600,000

Project purpose

To provide for repair, rehabilitation, and improvements which are essential to the operation of Government-owned, contractor-operated facilities at Edwards, Seal Beach, Sacramento, Downey, and the Air Force industrial plants which are being utilized for NASA programs.

Project description

This project will provide for essential repair, rehabilitation, and improvements to Government-owned facilities at various locations in order to maintain existing manufacturing and testing capabilities in support of continuing NASA programs. Typical items of work are:

Edwards test facility.—Repair of concrete aprons and deflector water channels at the base of the F–1 engine test stands, and replacement of approximately 2,400 linear feet of water distribution piping serving the test facilities.

Seal Beach test facility.—Rehabilitation of the chemical processing system in the bulkhead fabrication building, and rehabilitation of the water-conditioning plant.

Sacramento test facility.—Rehabilitation of the cryogenic transfer system, including overhaul of hydrogen and nitrogen vaporizes, replacement of pipe insulation and repair of the hydrogen burn ponds, rehabilitation of critical power systems serving ground support equipment, and overhaul of electrical and mechanical utility systems.

NASA industrial plant, Downey.—The replacement of approximately 20,000 square feet of corrugated metal roofing, and improvement of the drainage system for the 660,000 square foot sawtooth roof of the manufacturing building.

Air Force industrial plants.—Capital type rehabilitation of Air Force plants used in support of NASA programs as follows:

AF plant No. 56 (Canoga Park).—Improvements to factory lighting, rehabilitation of floor and roof areas, and improvements to the site drainage system.

AF plant No. 57 (Santa Susana).—Rehabilitation and improvements to the domestic sewerage system, replacement of the industrial water pump serving the deflector cooling and firex system, and repair of perimeter fire roads.

Project justification

The capital investment in Government-owned industrial and test facilities in support of NASA programs approximates $296 million. This investment must be protected by a planned program which encompasses capital-type rehabilitation, "one-time" maintenance work and those alterations and improvements considered necessary to maintain the capability of these facilities.

At Edwards, the turbulence generated by F–1 engine testing has caused the concrete aprons at the base of the 1–C and 1–E test stands and the deflector water channels in the flame impingement areas to crack so that repair is now required. The domestic and firex water distribution systems are experiencing failures at a rate that will make replacement mandatory in fiscal year 1969. This has been caused by a high corrosion rate resulting from excessive free oxygen in the water supply.

At Seal Beach, where final assembly of the S–II stage is accomplished, the processing units which are used to chemically clean bulkheads, bulkhead gores, and other S–II stage components have experienced a deterioration of piping, pumps, and control valves due to the corrosive action of the chemical liquids involved. Similarly the water-conditioning plant, which provides for the treatment and storage of 1,200,000 gallons of high purity water needed to support S–II stage manufacturing, is also experiencing corrosion of pipes, valves, and storage tanks. To maintain the capability of the chemical cleaning system and the water conditioning plant, replacement of deteriorating pipes, pumps, valves, and relining of the storage tanks must be accomplished.

At Sacramento, where the S–IVB stages are tested, the cryogenic transfer system serving the Beta complex will require major rehabilitation due to the embrittlement and fatigue caused by the subfreezing temperatures of liquid propellants. The liquid hydrogen and liquid nitrogen vaporizers require overhaul, and polyurethane foam insulation protecting the cryogenic piping must be replaced. The concrete burn ponds have cracked and spalled as a result of the burning of liquid hydrogen in the course of testing and must be repaired. The direct current rectifiers and rotating generator sets which provide critical power to the ground support equipment must undergo major overhaul due to heavy usage. Similarly a number of items in mechanical and electrical systems serving the test complexes such as pumps sets, motorized valves, and the cooling tower will require major repair.

At Downey, the site of Apollo spacecraft fabrication activities, portions of the 25-year-old roof of the 15-acre manufacturing building have rusted and are developing leaks at a rate which indicates that at least partial replacement is mandatory. The roof drainage system of this structure has also deteriorated to a point where replacement of gutters, drain pipes, and nonclogging mesh screens will be necessary.

Rehabilitation, improvements, and repair at the Air Force industrial plants at Canoga Park and Santa Susana must be accomplished in accordance with NASA–DOD agreement to maintain these plants in good operating condition. This item provides for the NASA share of the cost.

Estimated future year funding for this project: It is estimated that about $1 million per year will be required to protect the Government investment and keep these various location plants in operation.

Air Pollution Control Facility

Authorization line item: Various locations.
Program office for the project: Office of manned space flight.
Location of project: NASA industrial plant, Downey, Los Angeles County, Calif.
Cognizant NASA installation: Manned Spacecraft Center.
Type of construction project: Modification and extension.

Funding:

Fiscal year 1968 and prior years	$19,000
Fiscal year 1969 estimate	350,000
Total funding through fiscal year 1969	369,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction:				
Building addition	Square foot	2,800	$18	$50,400
Utilities	Lump sum		10,000	10,000
Equipment:				
Fume incinerator	do		229,600	229,600
Paint spray booth	do		60,000	60,000
Design				
Fallout shelter (not feasible)				None
Total				350,000

Project purpose

To comply with Los Angeles County air pollution control regulations by installing facilities which will control the discharge of organic solvents into the atmosphere.

Project description

In order to comply with Los Angeles County air pollution regulations, the following additions and modifications to the Downey plant will be accomplished:

(*a*) Construction of a 2,800-square-foot extension to the bonding and testing facility to house a paint spray booth with associated air handling equipment. The structure will have a steel frame with metal siding.

(*b*) Installation of a fume incinerator system adjacent to the bonding and testing facility. The fume incinerator system will serve the new paint spray facility, and an existing oven baking facility which is located in the bonding and testing facility. To effect economy the oven baking and paint spraying facilities will be centralized so that one incinerator can burn the exhaust products from both operations.

Project justification

The installation of air pollution control equipment must be accomplished in order to comply with a rule recently adopted by Los Angeles County in connection with the abatement of air pollution. This rule limits the amount of material which may be discharged into the atmosphere during a 24-hour period to 15 pounds of organic solvent from operations such as oven baking and heat curing; and 40 pounds of photochemically reactive organic solvent from operations such as cleaning and spraying.

At the Downey plant, organic material is discharged into the atmosphere from oven baking and paint spraying operations associated with the manufacture of spacecraft. The organic discharge from these operations amounts to approximately 20 pounds and 50 pounds respectively, which exceeds the limits established by the Los Angeles County rule. All Federal agencies have been called upon under Executive Order 11282, Prevention, Control, and Abatement of Air Pollution by Federal Activities, for leadership in abating air pollution from their own operations and facilities. Therefore, compliance with the Los Angeles County rule is in consonance with the executive order.

Estimated future year funding for this project: None.

Deep Space Antenna (210-Foot) Facilities

Authorization line item: Various locations.
Program office for the project: Office of tracking and data acquisition.
Location of project: Canberra Complex, Australia; Madrid Complex, Spain.
Cognizant NASA installation: Jet Propulsion Laboratory.
Type of construction project: New.

FUNDING

	Canberra, Australia	Madrid, Spain	Total
Fiscal year 1968 and prior years	$280,000	$260,000	$540,000
Fiscal year 1969 estimate	15,418,000	1,582,000	17,000,000
Total funding through fiscal year 1969	15,698,000	1,842,000	17,540,000
Future funding required	(1,629,000)	(15,371,000)	(17,000,000

PROJECT COST ESTIMATE: CANBERRA, AUSTRALIA

	Unit of measure	Quantity	Unit cost	Total cost	Being requested in fiscal year 1969
Land acquisition					
Construction				$14,761,000	$14,512,000
Operations building addition	Square feet	15,000	$39.47	592,000	592,000
Powerplant addition	Kilowatt	1,500	456.67	685,000	685,000
Microwave laboratory building	Square feet	3,750	46.14	173,000	
Antenna system	Each	1	13,202,000	13,202,000	13,126,000
Supporting features	Lump sum		109,000	109,000	109,000
Equipment				2,286,000	906,000
Antenna electronic equipment	Lump sum		1,936,000	1,936,000	686,000
Communication equipment	do		67,000	67,000	67,000
Installation, integration and evaluation.	do		283,000	283,000	153,000
Design					
Fallout shelter (not feasible)					
Total				17,047,000	15,418,000

PROJECT COST ESTIMATE: MADRID, SPAIN

	Unit of measure	Quantity	Unit cost	Total cost	Being requested in fiscal year 1969
Land acquisition					
Construction				$14,663,000	$1,582,000
Operations building addition	Square feet	15,000	$37.60	564,000	
Power plant addition	Kilowatts	1,500	454.00	681,000	
Microwave laboratory building	Square feet	3,750	43.74	164,000	
Antenna system	Each	1	13,128,000	13,128,000	1,456,000
Supporting features	Lump sum		126,000	126,000	126,000
Equipment				2,290,000	
Antenna electronic equipment	do		1,936,000	1,936,000	
Communication equipment	do		67,000	67,000	
Installation, integration, and evaluation.	do		287,000	287,000	
Design					
Fallout shelter (not feasible)					
Total				16,953,000	1,582,000
Grand total				34,000,000	17,000,000

Project purpose

To provide a required increase in the deep space ground antenna capability by completing in a timely and economical manner a three-station network of deep space (210-foot) antenna facilities appropriately spaced around the earth.

Project description

This project is for the construction of a 210-foot diameter advanced antenna system (AAS) for the NASA/JPL deep space instrumentation facility (DSIF) at both Canberra and Madrid.

The AAS installation of these projects together with the AAS installation now nearly complete at Goldstone will provide a three-station network with the increased performance required for planetary spacecraft projects of post-1970 flight dates. The three-station network will be capable of continuous communication with deep space vehicles in the declination range 28.5° N. to 28.5° S.

Each of the advanced antenna system facilities included under this project will consist of augmentation of the existing deep space network facilities located at Canberra, Australia and Madrid, Spain. This project will provide for: (1) the construction of a 15,000-square-foot addition to each of the existing operations buildings; (2) increasing the output of the existing powerplants to meet the requirements of the advanced antenna system; (3) fully steerable 210-foot diameter, paraboloid reflector-type antennas complete with concrete pedestal, control room, machinery and equipment rooms at each site; and (4) 3,750-square-foot microwave laboratory buildings. The project will also provide for all necessary supporting features including utilities, outside communications, roads, water storage, fuel storage, site development, and security features at each site. The project will further provide for the essential electronic equipment associated with the antenna system.

Project justification

The installation of two overseas antenna (210 foot) facilities will complete the three-station network necessary to support planetary spacecraft projects planned in the early 1970's.

This network is required for the continuous surveillance of the spacecraft during the complex planetary reconnoitering and atmospheric probe missions which are evolving from past successful early missions in the vicinity of the Moon, Mars, and Venus. These missions initiated by Ranger, Mariner/Venus, Mariner/Mars, and Lunar Orbiter all have demonstrated the important balanced performance required between the spacecraft and ground communications systems to obtain meaningful and sufficient amounts of data. Increased emphasis on visual imaging experiments by these future missions, particularly the reconnoitering or orbital types will be conducted over longer periods of time and will result in even more significant increases in the quantity of data to be transferred to the ground stations. Future orbital missions, as compared to past short time observation and longtime data transfer flyby type missions, will require extensive time sharing between the flight observational and the data transfer activity at much higher data bit rates. As an example, even a partial planetary survey of the Martian surface similar to that conducted by a single Lunar Orbiter mission acquires more than 1,000 times more data bits than that planned for even Mariner 1969—a task which becomes virtually impossible to accomplish by an 85-foot antenna network. The total support period afforded by a complete high performance 210-foot antenna communications network, however, influences directly the ability to receive these quantities of data in a reasonable period, thus the complete network availability becomes one of the pacing factors in orbital mission effectiveness.

Secondly, but equally important, the AAS provides the required continuous and reliable high power positive command control for distant planetary spacecraft under all attitude conditions. This continuous coverage capability is vital to mission success when adverse spacecraft maneuvers or anomalies result in poor onboard command reception.

Further, as demonstrated by the recent support by the Goldstone 210-foot AAS, the sixfold communication advantage over the 85-foot standard antenna permits an important extension to the useable life of such valuable spacecrafts as Pioneer and Mariner which have passed beyond the communication range of the 85-foot antenna. Based on the performance of the ongoing Pioneer spacecraft, support to these and future extended mission phases will utilize a large part of the AAS network available time in the post-1971 period.

The single 210-foot AAS at Goldstone having a limited viewing opportunity for all these various interplanetary and planetary missions cannot satisfy these broad requirements. Continued dependency on the existing 85-foot antenna network and single Goldstone 210-foot AAS will unduly constrain the already difficult design of planetary encounter, injection, launch, atmospheric probe, lander, and observation phases of future missions.

Estimated future year funding for this project: $17 million.

	Fiscal year 1970	Fiscal year 1971	Total
Canberra, Australia	$1,250,000	$379,000	$1,629,000
Madrid, Spain	13,750,000	1,621,000	15,371,000
Total	15,000,000	2,000,000	17,000,000

PHASED ARRAY ANTENNA SYSTEM

Authorization line item: Various locations.
Program office for the project: Office of Tracking and Data Acquisition.
Location of project: Goldstone Complex, Fort Irwin, Calif.
Cognizant NASA installation: Goddard Space Flight Center.
Type of construction project: New.

Funding:

Fiscal year 1968 and prior years	$60,000
Fiscal year 1969 estimate	2,880,000
Total funding through fiscal year 1969	2,940,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				263,000
Operations building	Square feet	2,000	$35.00	70,000
Electrical substation	Kilovolt-ampere	3,125	34.88	109,000
Electrical distribution	Lump sum		30,000	30,000
Antenna foundations	Each	12,000	1.67	20,000
Water and sanitary sewer	Lump sum		4,000	4,000
Site preparation	do		18,000	18,000
Access roads and walks	Square yards	2,400	5.00	12,000
Equipment				2,617,000
Antenna	Each	12,000	109.50	1,314,000
Transmission line	Linear feet	5,500,000	.07	385,000
Electronic equipment	do		918,000	918,000
Design				
Fallout shelter (not feasible)				None
Total				2,880,000

Project purpose

This project provides for a unique NASA antenna field with associated equipment and facilities required to support the Sunblazer project.

Project description

The antenna field will consist of a fixed, three-frequency (38.25, 74.9, and 224.7) planar array design on the basis of a nested cogeometric arrangement. Each frequency antenna element array will have 4,000 module units consisting of a crossed dipole, mounted on a stake and ancillary equipment such as transmitter, reflector, amplifier, and mixer. Supporting features consist of: an instrumentation and operations buildings (2,000 square feet) to house electronic equipment, electrical substation, transmission cabling connecting the arrays with the operations building and necessary roads, utilities, and site preparation to support the antenna arrays. Construction will conform to the existing NASA area facilities. The facilities will be located on 65 acres of existing Government land.

Project justification

The Sunblazer project will launch a number of relatively small spacecraft into interplanetary space in order to obtain solar corona electron density data. Because of the spacecraft's size limitation, there is a limited payload weight for accommodating radiofrequency instrumentation. In order to compensate for

this equipment limitation and to accommodate the frequencies unique to the spacecraft, a large area ground antenna array is required. Existing antennas lack sufficient aperture, combined with beam steering mechanism, to provide this support. This project will provide an antenna system capable of receiving and transmitting with sufficient aperture to acquire the low-power signals emitted by the Sunblazer spacecraft.

Estimated future year funding for this project: None.

Powerplant Replacement STADAN Facility—Fairbanks, Alaska

Authorization line item: Various locations.
Program office for the project: Office of Tracking and Data Acquisition.
Location of project: Fairbanks, Alaska.
Cognizant NASA installation: Goddard Space Flight Center.
Type of construction project: Replacement.
Funding:

Fiscal year 1968 and prior years	$135,000
Fiscal year 1969 estimate	1,875,000
Total funding through fiscal year 1969	2,010,000

PROJECT COST ESTIMATE

	Unit of measure	Quantity	Unit cost	Total cost
Land acquisition				
Construction				$675,000
Powerplant building	Square foot	5,000	$45.00	225,000
Relocate and renovate 3 existing generators with switchgear.	Lump sum		100,000	100,000
Electrical distribution	do		295,000	295,000
Utilities	do		25,000	25,000
Site development	do		30,000	30,000
Equipment: Generator sets with switchgear	Kilowatt	3,000	400.00	1,200,000
Design				
Fallout shelter (not feasible)				None
Total				1,875,000

Project purpose

This project will provide an adequate and dependable power source for the Alaskan STADAN tracking station.

Project description

This project is for the construction of a 5,000-square-foot, single-story, 4,050-kilowatt (KW) power building at the STADAN facility at Fairbanks, Alaska. Three of the existing power generator units will be refurbished and relocated in the new power building. One existing power generator unit will be skid mounted to provide emergency transportable power for remote equipment within the complex, especially during the harsh winters. Additional new power-generating units will be provided to replace wornout and obsolete units. After the power equipment is relocated, the existing power building will be modified and utilized for increased bulk storage and workshop area for this prime STADAN station.

Project justification

The present powerplant at the Alaska STADAN facility was constructed in 1960 and designed to provide power for a single 85-foot antenna system facility constructed to accommodate the scientific satellite program at that time. Since then, the station has been expanded by the addition of two satellite automatic tracking antenna (SATAN) receive and command systems, a range and range rate system, a minitrack system, a 40-foot antenna system, and the ESSA 85-foot antenna. With the addition of each system, the powerplant was augmented accordingly, to the extent that the present plant is inefficient and electrical distribution within the plant is below standards of an integrated electric power distribution system. In addition, the station does not have backup power for critical loads. Because of the large workload, 24 hours a day, each expansion or addition has been con-

strained to a point where the efficiency, economy, and reliability of the powerplant has been compromised. Since this is a key station in the STADAN, a new powerplant is required to guarantee the uninterrupted support to the scientific and applications satellite programs. The proposed power building will provide an efficient generating system, with sufficient backup power to meet present and expanding operational requirements at the station.

Estimated future year funding for this project: None.

FACILITIES PLANNING

Mr. EVINS. You are asking for $3 million for new facilities planning. What other new facilities are you planning?

Mr. LILLY. This $3 million is broken down into essentially two parts. One million dollars of that is used for preliminary engineering work, master planning, and cost estimates that go into these budget documents. The other provides for the final design, drawings and specifications of the——

Mr. EVINS. Are these just the facilities needed at existing facilities?

Mr. LILLY. The estimate, Mr. Evins, is that this amount of design money would support a program of around $50 to $60 million. As we indicated throughout the book at the end of each project, many of these projects do have a forecasted rehabilitation and repair requirement. Now, specifically, we will have next year in our proposed 1970 budget, for instance, one item which is the second increment on this deep space net antenna. Another item that we forecast would be for Launch Complex 39. We estimate that to update and to keep this facility in operating condition will require between $5 million and $7 million a year. In terms of specific new facilities that will be proposed, I cannot say that I have a list of those at this point in time.

TOTAL INVESTMENT IN NASA FACILITIES

Mr. EVINS. What is the total investment of all the facilities?

Mr. WEBB. Around $4 billion.

Mr. EVINS. I had the impression it was $5 billion.

Mr. WEBB. That is of Government facilities. There are associated contractor-owned facilities that raise that figure.

Mr. EVINS. With an investment of $4 billion in NASA facilities you have to do some planning on maintenance, replacement, et cetera. I imagine they are all requesting more than you are able to fund.

Mr. WEBB. But these new technologies are moving very rapidly, also, Mr. Chairman, so we must do a certain amount of planning of facilities to keep up with the newer technologies.

PROCUREMENT OVERCHARGES

Mr. PRYOR. This really relates back to a previous discussion, but I think this would be as good a point as any to put it in.

One of our colleagues in the House last year in an investigation of the Defense Department procurement systems found that they were purchasing certain items for 20, 30, or 100 times what you could buy them for from, let's say, the Western Auto Store or the local hardware store. Now, this basically pertains to smaller items purchased, but it runs into millions of dollars. Do you have a review board or a group

within the NASA framework that constantly is surveying this type of situation which might occur?

Mr. WEBB. We have an auditing and inspection system. To a certain extent we do not duplicate the audits made by the Defense Department of a contractor where we both use the contractor. We do not duplicate certain of the audits made by the General Accounting Office, but rather we use their audit data so that the work will not be done twice.

Now, the Chairman asked us yesterday to put a statement into the record with respect to certain items of this nature that he felt maybe we had been overcharged on. In some cases we were aware of the situation and had asked the contractor to make a refund. The general level at which we make a direct comparison or get cost data is $2,500. Now, this is a constant battle, when you are buying one or two of a special item where, even though it may be listed in a catalog, it may not be available and may have to be made especially for you to get it on time. We are doing our very best with it, but within the American industrial system the policy of a contractor is to get what he can for his product. So there is a constant battle here. We will put a statement in the record, as requested by the Chairman.

Mr. EVINS. Mr. Finger said that they pointed out five items in which there were increased costs as against—how many millions of items were purchased?

SMALL PURCHASES

Mr. FINGER. Mr. Chairman, there were last year about 180,000 items, small purchases of the type you are mentioning, Congressman Pryor. The total cost of those is about 1 percent of our procurement dollar amount. But in numbers of actions, that makes up close to 80 percent of the numbers of procurement actions that we complete. These items are looked at by relatively low level procurement officials. However, they are required to call several contractors in order to try to get some evaluation of reasonableness of cost. They are supposed to check with previous procurements of the same kind.

One other point I think is worth making. Many of the items that we buy do have special requirements even though they may appear to be standard items that look like items in catalogs, and therefore, they are no longer standard because of the particular requirements we have to impose on them, for special inspection requirements or special quality control. But the important thing is that there are hundreds of thousands of these.

Mr. EVINS. What is that old story? For the loss of a nail the shoe was lost, for the loss of the shoe the horse was lost, and for the loss of the horse the race was lost. So little things are important. We commend you for your diligence in these small matters.

Mr. TALCOTT. Is $2,500 a reasonable amount or do you think that it should be a different figure?

Mr. WEBB. I think that is a reasonable amount considering the administrative costs that would be incurred if you dropped it. You have always got the problem that if you go below that and take other thousands of items, the cost of looking at those thousands of items would probably be more than you would lose from the way you are doing it presently.

Mr. TALCOTT. Do you think that the contractors know the $2,500 cutoff and that they chisel on items below that amount?

Mr. WEBB. They always subject themselves to being caught in the audit. The point I wanted to make is the fact that the General Accounting Office, for instance, finds it in an audit, or the Defense Department Audit Service finds it, doesn't mean we are overlooking it; it simply means we are relying on them to catch it and then we take action to recover the funds. There is a better internal policing system for these kinds of things than would be apparent from the small number of items that show up and look flagrant——

Mr. TALCOTT. It is a lot of fun for members of the Congress to catch you in a $5 mistake.

Mr. WEBB. I think also you have this problem: that where you use project managers in places like universities where we have the Owl project or as we did with Ranger at JPL where the tradition is very strong to let the project manager procure smaller items, he will tend to go to unapproved stores.

Now, one of our battles is to force them to buy approved equipment which may cost ten times as much but which guarantees the success of the flight. We have had a number of cases where we have had to strip down a spacecraft and take out from 100 to 300 items that had been procured of nonstandard equipment. To qualify things for space operation or aeronautical operation, say, in a thing like a supersonic transport, is a very expensive process. Now, just the simple question of insuring that the weldment used by a welder is the proper material, in order to maintain the quality required in the supersonic program is a very expensive process, if he, for instance, used pure titanium instead of an alloy. Now, that can be a very, very expensive thing.

Mr. PRYOR. Off the record.

(Discussion off the record.)

PROCUREMENT PHILOSOPHY

Mr. WEBB. Let me say one other thing, since I don't believe this committee has really looked at this in some time: We started aeronautical research in 1916 when we had very little capability in aviation. Ten years later we found we had to revise the procurement laws and emphasize quality instead of low price. The Air Corps Act of 1926 set up these design competitions, Mr. Chairman, if you remember. The idea was you would have three or four people engaged in design competition and the Government would pay for all four of them, it would own the designs, then it would go to the best manufacturer of the design and would retain the patent rights so they could then compete again. In the end they found it was better to go to the manufacturer and stay with him because the things they got from the lowest bidder, even after one job of manufacture had been done, were in fact not as good and didn't give you as much for the money. When you are fighting, for instance, in a military service, a small percentage of lowered performance may mean the difference between getting shot down or shooting the other man down. So there has been this tradition since 1926 of emphasizing quality rather than the lowest possible price as being the best policy for the Government in this very difficult field.

FACILITIES OVERSEAS

Mr. MARSH. When you put these facilities in oversea areas, what efforts do you make to insure that we will have their continued use, or at least have their use for a period of years?

Mr. WEBB. We work closely and intimately with the State Department. They monitor and supervise all of these agreements. The agreements run to the U.S. Government and not to NASA. They are very strong and binding agreements. Now, you cannot make them uniform anywhere.

Mr. MARSH. Do they run for a period of years?

Mr. WEBB. Yes.

Mr. MARSH. For example, the one in Spain, how long is that for?

Mr. TRUSZYNSKI. Until 1974.

Mr. WEBB. 1974.

Mr. MARSH. That is not very long.

Mr. WEBB. But we have so many other arrangements that have to be negotiated in these time cycles, that the judgment of the State Department was that as a nation this was the period we should negotiate for.

Mr. MARSH. That was the State Department's judgment?

Mr. WEBB. That was their judgment; yes, sir. We would like to have 20 years, but we have to follow the policy of the Government in this regard. But they relate it to other factors.

Should we say more about this?

Mr. TRUSZYNSKI. I think that is a good summary.

Mr. WEBB. Overall, the United States deals with each country somewhat differently.

COMPARISON WITH PRIVATE FACILITIES

Mr. MARSH. We have some other precedents, for instance, we have the finest private communications network in the world, the A.T. & T. and similar agencies. Now, what sort of systems do they use for long-term procurement of facilities?

Mr. WEBB. They use term agreements, but they rely more on the value of the ongoing system to the other party, so that it penalizes the other party very much to break out of it. I think you will find that there is a relationship among these international communications companies where they do not necessarily rely on an agreement.

INVESTMENT IN SPAIN

Mr. MARSH. What is your investment going to be in this Spanish operation?

Mr. TRUSZYNSKI. The total investment will be some $50 million as we get this facility in.

Mr. MARSH. We have invested $50 million in something that we have an agreement that we can use only until 1974; is that right?

Mr. TRUSZYNSKI. Currently that is the length of the agreement.

Mr. WEBB. It is also of some value to Spain to have it there.

Mr. MARSH. You would prefer to have a longer agreement, though, wouldn't you?

Mr. WEBB. I would, yes.

Mr. MARSH. Off the record.

(Discussion off the record.)

Mr. EVINS. Gentlemen, in the first 10 years of space, the first decade, you have had major achievements, and there have been no scandals. You have an efficient, capable administration. We will take a look tomorrow at your Apollo applications and your other research programs. Suppose we suspend until tomorrow.

Mr. WEBB. Thank you, Mr. Chairman.

WEDNESDAY, MARCH 13, 1968.

Mr. EVINS. The committee will come to order. We will resume our hearings on the appropriation requests of the National Aeronautics and Space Administration.

REVIEW OF REQUIREMENTS

Mr. Webb, I understand that you are in the process of making some important decisions regarding flight operations and scheduling. If you will tell us now what your thinking is or what your decisions are in this matter it would be helpful.

Mr. WEBB. Yes, Mr. Chairman. After the committee adjourned yesterday we met with groups of our senior officials who have been reviewing all of the problems associated with the second launch of the Saturn V, which is now on the launch pad at Cape Kennedy. We also reviewed the data received from the first unmanned flight of the Lem.

Dr. George Mueller has participated in all of the preliminary conferences and in the decision process. It was he who presented the alternatives for final decision last night. I would appreciate it, and I believe it would be of interest to the committee, if you would give him an opportunity to proceed.

Mr. EVINS. We would be pleased to hear your statement, Dr. Mueller.

MANNED FLIGHT OF LUNAR MODULE NO. 3

Dr. MUELLER. Mr. Chairman, the Design Certification Review Board, of which I am the Chairman, reviews all of the basic designs and the operational aspects of our vehicles before we man-rate them. As a consequence, we reviewed very carefully the results from the Lunar Module No. 1 flight in January to see whether or not we had progressed far enough into design of the vehicle and in its tests to verify that it was in fact ready for manning.

We have reached the decision and so recommended yesterday, that we not fly Lunar Module No. 2 in an unmanned configuration but go directly to the manned flight on the Lunar Module, on Lunar Module No. 3. That will take place, then, late this year.

The flight of Lunar Module No. 1 successfully verified the propulsion and structural aspects of the lunar module to the point where we feel this is the best way to use our resources in order to go forward.

Mr. EVINS. It is your decision to fly an unmanned flight in the

Apollo program in 2 or 3 weeks, and probably a manned flight late in the fall?

Dr. MUELLER. The second major decision we made was to proceed with the unmanned flight of Saturn V–502 on March 28. So far this has successfully passed all of its prelaunch checkout and is ready to go.

MIXED GAS ATMOSPHERE IN COMMAND MODULE

The third major decision was with respect to the atmosphere to be used in the command module, both in flight and on the ground, in the next manned flight of a Block II spacecraft. Here we reached the decision to use a mixed gas, 60 percent oxygen, 40 percent nitrogen, on the launch pad and to use pure oxygen at 5 psia in space. Five pounds per square inch pressure of pure oxygen will be used, as we told you last year, for our space flight, but we did make the decision to use a mixture of gas on the launch pad itself.

BLOCK II CSM MAN-RATED

A fourth major decision yesterday was with respect to the man-rating of the Block II command and service module. That was carefully reviewed. We have concluded that the Block II design with its new materials and its new configuration of hatch is satisfactory for manned flight, and we will be carrying forward the first manned flight in the last half of this year.

Mr. EVINS. Dr. Mueller, it certainly appears that NASA officials have regained the momentum, but I want to reemphasize that which Mr. Webb testified to earlier, we are glad to see you proceed but proceed only when you are sure that you are ready to fly.

Dr. MUELLER. Yes.

Mr. WEBB. Those recommended decisions by the Review Board, of which Dr. Mueller is chairman, have been embodied in a document which is being reviewed this morning and which I expect to sign before the end of the day. I think these decisions can give the committee confidence that we have done everything necessary to make the Block II configuration of Apollo capable of carrying men successfully and that our review of the data on the first lunar module shows it is now ready to carry man.

Mr. EVINS. Mr. Webb, I know I have heard you state that it has been a policy of NASA to proceed only when you are sure you are right.

Mr. WEBB. Yes, sir; that is true.

Mr. EVINS. We have confidence in our officials.

Mr. WEBB. Thank you, sir.

ARTICLE ON NASA–DOD RELATIONSHIPS

Mr. EVINS. It has been called to my attention that there is a dispute. This is an article in the March issue of Aerospace Daily, in which it says that NASA and DOD are locked in a heated debate on earth surveillance:

> An important high level debate is raging in Washington over the level of advanced earth-pointing-sensor technology NASA will be allowed to use in its emerging earth resource satellite systems.

Some sources interpret Pentagon resistance to allowing NASA use of high resolution surveillance systems as a step to monopolize jurisdiction of photographic-infrared earth observation systems and at least one source said outcome of the debate will be a key facet in determining the nature of the Apollo Applications program.

The debate has not been made public yet, essentially because of secrecy shrouding the Air Force's reconnaissance satellite programs. The Air Force is persistently blocking use in ER satellites of certain cameras, infrared sensors, satellite stabilization and other subsystems developed for military surveillance spacecraft.

One NASA source told Aerospace Daily "I personally know of at least four programs which DOD has killed in the past 2 years. Congress has told us that they want more done in the earth resources satellite area, but DOD, or at least some members of DOD, have kept their thumbs on us."

One example cited by this NASA official was the "multispectral tracking telescope." A project of Dr. Philip Slater of the University of Arizona to Tucson, the telescope was to have ground resolution of less than 1 foot. The project went through a design competition and procurement proceedings were begun. Suddenly, DOD, apparently in a joint DOD–NASA committee assigned to handle the sensitive earth surveillance issue, launched heavy opposition, and the program was killed last May.

A key issue in the dispute is how much resolution should be allowed in civilian surveillance satellites, and this matter is one which occupies Humphrey and the NASC. The most commonly heard "safe" number is 100 feet.

Do you wish to comment on that article?

Mr. WEBB. Mr. Chairman, what is the date of that article?

Mr. EVINS. March 13. It says they are locked in heated debate and DOD is blocking some of your programs, saying that you do not need them.

Mr. WEBB. Is that today, March 13?

Mr. EVINS. Yes, here is the article.

ADMINISTRATOR WEBB'S COMMENT

Mr. WEBB. I have not seen this.

I would like to comment not on any observation the Vice President may have made but on my own view of the emerging capability for scientific work as well as for military work.

I think, Mr. Chairman, you have heard me testify for several years that the new technology of multispectral sensing, plus the capability of earth orbital satellites—that is the whole system by which they are utilized, put in the proper place and made useful—was going to give the human race a very real capability to avoid surprises as to what other people may have heretofore thought they could prepare in secret; and, secondly, it was going to involve very large ethical, moral, and national policy questions.

The strong need of our military services, which I, myself, fully support, is to keep in effect classification procedures and classification decisions that are vital for our national security. In the decisions as to what to do in these fields, and in the decisions as to how to make progress with the scientific and technical phases, a number of very outstanding scientists are utilized by the Government. These scientists are cleared for work in these fields.

There are other scientists who are not involved in these military or classified areas who develop many ideas as to what they would like to go forward with, projects on which they would like to have financial support. The National Aeronautics and Space Administration occupies a rather unique role, and performs a rather unique

service within our Government. We do work with the military services in practically all of the areas, those that are unclassified and those that are classified. We also work very closely with those agencies who are not in the classified area, such as the Department of Interior, Department of Agriculture, and the scientific community which constantly and restlessly examines the way they can ask nature new questions that will reveal new knowledge and understanding.

In this role we carefully and scrupulously maintain the security system on which our national security depends, while at the same time we do endeavor to go forward with projects and to work with those who desire projects either within Government departments or in the scientific world which can proceed without violating the security system. This is an evolutionary role, and I am not able to predict exactly how it will ultimately work out.

VALUE OF NASA PROGRAM

This I do know: the work of the National Aeronautics and Space Administration in aeronautics and in space provides a constant cross fertilization across the boundary. The aeronautic work makes our space work more valuable, the feedback from space makes our work in aeronautics more valuable, and we do have excellent relationship with those scientists who operate in a very responsible way, who are prepared to have these decisions made within the proper governmental structure.

I believe, Mr. Chairman, you will see more of this kind of debate because many who do not understand the limitations of rocketry and who tend to overstate the opportunities which could come and understate the time and money required to develop those opportunities, tend to feel that something is obstructing the Government's furnishing of funds to go forward with projects that they would like. They will probably develop their argument in the public arena.

Mr. EVINS. It is a debate as to who shall secure the appropriations, in essense. Yesterday we had testimony that NASA was the razor-sharp blade of research and that once these discoveries and breakthroughs were made the Defense Department readily accepted them. The Defense Department does not do the research but NASA does. But this seems to indicate that DOD does not wish you to do this research, that they want to do it themselves. One thing I think that should be pointed out is that there should not be duplication. This should be resolved. I assume this debate has been going on prior to the installation of the new Secretary of Defense, Clark Clifford, and I would hope that the differences may be resolved with a new Secretary.

Mr. WEBB. There are no serious differences between the Department of Defense and——

Mr. EVINS. This says that they have vetoed some of your projects and that a dispute is going on.

Mr. WEBB. This is a very exaggerated statement. I would like to say that the National Aeronautics and Space Act of 1958 provides that our military services will do the research and development for military systems, for weapons systems, and that we are not to do that. So the area within which they are operating is a proper area.

Mr. EVINS. It is with respect to weapons systems or military systems?

Mr. WEBB. Yes, sir.

Mr. JONAS. I do not object to the debate, I do not think anybody does. That is the way we make progress, by exchanging ideas. But I do think that sometime, though this is an unnamed NASA source, they quote it as a NASA statement, some unnamed person saying "I personally know of at least four programs which DOD has killed in the past 2 years."

Mr. WEBB. I will state categorically that is not true, even if it is attributed to a NASA source.

Mr. JONAS. You mean you cannot say that the statement was not true but you can say they did not veto the programs. Is that what you mean?

Mr. WEBB. That is right. The substance of that statement is not true.

Mr. JONAS. Yes.

Mr. WEBB. I do not know if some NASA person said it to the reporter.

Mr. JONAS. You couldn't know that.

Mr. WEBB. Yes.

Mr. JONAS. But you are telling the committee that the substance of the statement is untrue, that those four programs were vetoed; you state that no programs have been vetoed.

Mr. EVINS. This having been called to our attention, we merely want to suggest that any disputes should be resolved so there will be no duplication.

STATEMENT ON WORKSHOP VERSUS MOL

Mr. JONAS. I understand you have to leave. I do not want you to do this now, but when the record comes down if you would put a statement in the record, try to make it one page or so, a statement showing what, if any, differences there are in your manned orbital workshop and the manned orbital laboratory of the Air Force. There is a feeling that these two programs are overlapping. The literature on the subject gives some evidence along that line. I read every now and then in the local papers some person makes the statement that we are getting ready to waste $4 or $5 billion in duplicating programs. You have testified here that they do not overlap, but I would like to have a statement pointing out any significant differences and why these two things cannot be merged.

Mr. WEBB. I will supply that for the record.

(The information follows:)

Because there are some superficial similarities between the Saturn I and Saturn V workshops in the Apollo applications program and the Manned Orbiting Laboratory program of the Department of Defense, and because the details of the Manned Orbiting Laboratory project are classified, the question of possible duplication between the Apollo applications and MOL programs is raised from time to time. Actually, the two programs are different in nature and not competitive with each other. Insofar as they have certain aspects in common, i.e., both involve the flying and use of men in earth orbit, they are complementary in nature and fully coordinated. However, the programs are different in nature and purpose, and the justification for each stands on its own feet.

The objectives of the MOL program are to develop, operate, and evaluate specialized experiments and equipment of military significance which require or benefit from man's participation in their operation in space. The experiments and systems involved are classified. In developing and proceeding with the MOL program, the Department of Defense is drawing heavily on NASA's experience and is making

use of equipment developed by NASA in the Mercury, Gemini, and Apollo programs. Thus, the MOL is a specialized classified program for defense mission purposes, and represents an example of the utilization by another Department for its mission purposes of NASA-developed space technology. In this respect, it is entirely similar to the Department of Commerce's use of meteorological satellites for its mission of weather observation and forecasting, and the Department of Defense's and the Communication Satellite Corporation's use of communications satellites for operational purposes.

The objectives of the Saturn I and Saturn V workshops in the Apollo applications program, on the other hand, are to advance further the Nation's capabilities and use of manned space flight in earth orbit for a wide variety of scientific, technological, and other applications. In this regard, the Saturn V workshop, and the Saturn I workshop which will precede it, are major steps beyond the MOL system in size, in performance, and in potential uses. For example, the Saturn V workshop will be 22 feet in diameter compared to 10 feet for the MOL. Its pressurized volume will be 10 times that of the MOL. It will accommodate six to nine men compared to only two for the MOL. It will be designed to be placed in orbit for continuous or repeated use over an indefinite period of time, as compared to the 30 days useful life in orbit planned for MOL. Because of its size and capability, it can be used as the central "antarctic" type base for a variety of operations, including working with separately orbited equipments like a large astronomical telescope, whereas the MOL is necessarily limited to experiments of the magnitude and type now planned for defense purposes. The MOL cannot do what we are setting out to do in an AAP. The MOL is specially adapted to and will be fully utilized for the classified experiments the Department of Defense has in mind.

DEATH OF ASTRONAUT C. C. WILLIAMS

Mr. MARSH. Two things that really tie together here. This past year I believe we lost the young astronaut Williams.

Dr. MUELLER. C. C. Williams.

Mr. MARSH. Yes. I had an opportunity to meet with him. In fact, he spoke in my district and I was very impressed by him. I noted he was killed, as you have lost several others, in a jet training flight. Is this type of training necessary, or is flying jet aircraft so difficult that you have to keep your hand in and maybe they are not flying enough?

Dr. MUELLER. We have had a very careful review of this very question by both the Air Force and ourselves. General Houston and John Stevenson, head of our mission operations, went through and reviewed all of the accidents we have had in T–38s as well as all of the accidents that the Air Force has had, trying to see if there was some common pattern.

We find that the procedures and the care being taken are proper and good in both sets of applications.

Now, with respect to the necessity for carrying on this kind of flight training, we do believe that training is the basic reason we have had no incidences in flight of vertigo or any other symptom of air sickness; whereas, for comparison, the Russians, in their early flight programs, have experienced quite often what you might call space sickness or air sickness. We do believe that the training and the experience that is involved in maintaining flight proficiency is essential to the maneuvering of these spacecraft which is a fundamental part of our space program.

LENGTH OF ASTRONAUT TRAINING

Mr. MARSH. In that same regard—and I am glad to have that statement—on the film that was shown on TV recently about the Russian space program, they seemed to emphasize the minimum amount of

training time that some of their astronauts had. You might want to review that film. In fact, they referred to several months' training. This raises the question as to how much training is necessary.

Dr. MUELLER. Our understanding is that the Russians have now adopted our training techniques. They have greatly extended their training time and the depth of their training also.

Mr. WEBB. One of the things that the Air Force and NASA have jointly reviewed recently indicates that we ought to do more flying in the very high performance airplanes and less in the earlier trainers like the T–33. This is one of the problems we will face: if we phase out the T–33 aircraft, we will have to buy the additional high performance T–38 aircraft.

There has been a slight difference in our training procedures in that we have flown these aircraft with one pilot rather than following the rule the Air Force generally follows that there must be two pilots. This has partly been to develop the most flight time for pilots out of each flight. In essence, we are going to adhere to this, the NASA provision, that one pilot flies because he gains far more experience by being on his own under these conditions. I think you can be assured that we are deeply concerned about the accidents that have occurred.

I think the Air Force felt extremely concerned when they lost an astronaut in an airplane accident. But we are looking at this constantly with the greatest of care. I think you will see more high performance aircraft use rather than less as a means of making sure that these men are ready, willing, and able to do the job they have to do when they get into space.

Dr. MUELLER. That is quite correct.

Incidentally, the rate of accidents is comparable to, is, in fact, less on an average, than that of training flights in general.

Mr. WEBB. You also must bear in mind that not only do we have these jet trainers, but we have some very complex flights to make in these lunar landing simulators, for instance, which do not have any wings at all.

We constantly are revising the system under which we make the decision as to who can fly, under what conditions, and how to maximize safety in what is, in essence, a risky operation.

PRESIDENT'S REPORT ON AERONAUTICS AND SPACE

Mr. EVINS. Gentlemen, I am very much impressed with the report to the Congress by the President on aeronautics and space activities in 1967. I commend the reading of this to all interested in this field.

I want to just highlight a few items for the record. The first is the President's letter of transmittal. He points out that in this first decade we have reached new heights and he says that on November 9, 1967, a 280,000-pound Apollo payload was launched into orbit by a Saturn V rocket with 7.5 million pounds of thrust.

> In the time spanning those two events, the United States has placed 514 spacecraft in earth orbit. Twenty-eight others have been sent on flights to the moon or distant planets.
>
> The technology amassed through these expeditions has justified this Nation's commitment to conquer the challenge of space. It has encouraged us to lift our eyes beyond our initial goals and plan for the decade ahead.

The fruits of that technology have not been limited to space exploration alone. The knowledge built through our space program has benefited our earthbound lives. It has:

Revolutionized communications throughout the world;

Given us better weather information and more accurate navigational and geographic data;

Brought improved medical instruments and techniques, advanced education, and added to our store of scientific knowledge;

Spurred the development of more sophisticated aircraft and improved flight safety;

Strengthened both the security of this Nation and our leadership in the search for a peaceful and secure world.

If we can accomplish that latter goal, it will be a great achievement. I would like to place this letter into the record at this point. (The letter follows:)

PRESIDENT'S MESSAGE OF TRANSMITTAL TO THE CONGRESS OF THE UNITED STATES

This report details a year—and climaxes a decade—of American progress in space.

On January 31, 1958, a 31-pound Explorer I was fired from a Jupiter C rocket with 150,000 pounds of thrust. Ten years later, on November 9, 1967, a 280,000-pound Apollo payload was launched into orbit by a Saturn V rocket with 7.5 million pounds of thrust.

In the time spanning those two events, the United States has placed 514 spacecraft in earth orbit. Twenty-eight others have been sent on flights to the moon or distant planets.

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Brought improved medical instruments and techniques, advanced education, and added to our store of scientific knowledge;

Spurred the development of more sophisticated aircraft and improved flight safety;

Strengthened both the security of this Nation and our leadership in the search for a peaceful and secure world.

We can look with confidence to an expansion of these benefits as our space program moves into its second decade.

Our accomplishments thus far point to the path of progress ahead: Fuller observations of the earth, increasingly productive manned flights, and planetary exploration.

The year 1967 itself began with a major tragedy. Three of our gallant astronauts died in a fire while testing the Apollo capsule on the launching pad. Even as we saluted these men for the contributions they had made, we moved to improve the spacecraft as well as the safety procedures surrounding its use.

But though the year was shadowed by that disaster, its accomplishments significantly advanced our progress. The Saturn-Apollo flight in November was the greatest launch triumph to date. As the result of our success in photographing lunar landing sites, we have for the first time a complete mapping of the moon.

It is most heartening to me that our space program moved forward in a spirit of international cooperation, giving new hope that the conquest of space can contribute to the establishment of peace. Eighty-four nations participated in cooperative space activities with us. The Outer Space Treaty went into effect, after Senate approval. The United Nations unanimously recommended a procedure for the emergency rescue and return of astronauts and space equipment. I shall shortly be sending that treaty to the Senate.

It is with pleasure that I transmit this record of achievement to the Members of Congress, whose judgment and support have been essential to our aerospace progress.

LYNDON B. JOHNSON.

THE WHITE HOUSE, *January 1968.*

SUMMARY—U.S. AERONAUTICS AND SPACE ACTIVITIES

Mr. EVINS. Then I want to place the summary, pages 1 through 5, into the record. This lists about two pages of accomplishments and achievements.

(The pages follow:)

CHAPTER I. U.S. AERONAUTICS AND SPACE ACTIVITIES, 1967

SUMMARY

In the 10th year of the space age, the national space program of the United States experienced its first major tragedy—and achieved its greatest launch triumph to date. The Nation advanced its technology to new heights, making vital progress in the drive to land men on the moon in this decade and also to applying space-generated competence toward improving the lot of mankind.

As the year moved along the national space program faced increasingly serious funding competition from other high-priority programs. There continues, however, strong support for the program's objectives and policy.

A tragic fire on January 27 in an Apollo spacecraft at Cape Kennedy took the lives of three astronauts. After an intensive investigation, NASA undertook to make changes in the spacecraft itself, in operating procedures, and in organization. Schedule delays and cost increases have resulted but risks have been decreased and equipment improved.

On November 9, a Saturn V vehicle was launched for the first time, carrying an unmanned Apollo spacecraft into orbit. The spacecraft was carried to an altitude of 11,252 miles, from which it successfully reentered the earth's atmosphere at a velocity equivalent to that of a reentry on return from lunar flight. The Saturn V vehicle performed magnificently, using the unprecedented 7,500,000 pounds of thrust in its first stage to boost a record 278,699-pound payload into orbit. This was a heartening demonstration of the ever-growing capabilities of the U.S. program. Six more Saturn-Apollo flights are planned for 1968, and five in 1969. One of the latter may be our first manned moon landing mission.

Largely in preparation for our manned lunar landings, NASA carried its Lunar Orbiter series to successful completion during the year, concluding photographic surveys of eight proposed lunar manned landing sites. The program, with five successes in five attempts during 1966 and 1967, furnished photographs of the entire surface of the moon in detail 100 times greater than could be provided by earth-bound telescopes. It also sent back the first photographs of earth taken from lunar orbit.

Three soft-landing Surveyor spacecraft supplied more than 50,000 close-up photographs of the moon. In addition, they dug out a small trench, made chemical analyses of the lunar soil, and one even fired its vernier engines to lift the spacecraft 10 feet above the surface and reland it 8 feet away. Results of the program indicate that the moon's surface will adequately support manned landing craft. Two Surveyors were still operating as the year ended, and the seventh and last in the series is scheduled for launch in early 1968.

Far beyond the moon, the year saw a major interplanetary success when the Mariner V spacecraft, launched June 14, flew-by within 2,600 miles of Venus on October 19. The Soviet Union's Venera 4 spacecraft, launched on June 12, had soft landed on the planet on October 18. The two spacecraft made complementary measurements of the environment, vastly increasing our understanding of this neighboring planet.

Within the earth's atmosphere, there were major developments during the year in aeronautics. Here, too, tragedy struck, as an X–15 pilot was killed when his aircraft disintegrated in flight over the Mojave Desert on November 15. This was the first flight fatality in the history of the 8-year-old program. During the year the program investigated manned maneuverable travel at hypersonic speeds, and on one flight a new speed record of 4,534 miles per hour was set.

Elsewhere in the field of aeronautics, the supersonic transport (SST) program moved into its prototype development phase. On May 1, 2 days after the President announced the decision to proceed with the program, the Federal Aviation Administration signed contracts with the two industry companies which had won design competitions for the SST airframe and engines, respectively. The first prototype SST is schedued to fly in 1970, and production planes are expected to go into commercial service by about 1974.

On the military side of aviation, the manufacture and assembly of the world's largest aircraft, the C5A transport, continued on schedule. Rollout of the first craft is scheduled for February 1968, and first flight is expected in June 1968. The first F–111A with operational capability was delivered on October 16.

An advance with significance for both aeronautics and astronautics was a successful series of Air Force test flights of lifting body reentry vehicles. In three unmanned flights of the wingless aircraft, it was demonstrated that the lifting body could be maneuvered well away from its plotted reentry path and then maneuvered back into that trajectory. This was a step toward the goal of developing technology for reusable spacecraft that will be capable of taking off like aircraft, carrying out space missions, and returning to land under pilot control.

The Manned Orbiting Laboratory (MOL) program of the Department of Defense moved into engineering development early in 1967. All principal components of the system progressed on schedule, a static test firing of the first-stage engine of the system's Titan IIIM launch vehicle was carried out successfully, and construction of the MOL launch complex at Vandenburg AFB was begun. This spacecraft is intended to contribute to our national security. It has, however, no missions as a weapons system.

In furtherance of the desire of the United States and other nations for peace, the Treaty on Outer Space was approved without dissent by the Senate on April 25 and went into formal effect on October 10, when ceremonies were conducted in Washington, London, and Moscow. Also, the United Nations General Assembly unanimously passed an agreement on December 19, providing for assistance in the rescue and return of astronauts as well as of their space equipment. The agreement is now subject to approval by member governments.

Numerically, the U.S. space activity showed fewer spacecraft launched during 1967 than in either of the 2 preceding years. Yet, the 87 successes accomplished a variety of missions in near-earth orbit as well as in lunar and planetary exploration. It was a year of high reliability in both launch vehicles and spacecraft, reaching a peak with the Apollo flight on the mighty Saturn V, the world's most powerful rocket in operation.

The Soviets' overall space effort was stepped up during the year, with 67 payloads successfully launched, compared with 51 for the preceding year. On April 24, the U.S.S.R. suffered the first fatal accident in space when a Soyuz spacecraft crashed on reentry during its 18th orbit, killing its pilot. This accident prompted an investigation and a resultant delay of undetermined duration in the Soviet manned program. Among the U.S.S.R.'s notable successes of the year were the soft landing of Venera 4 on that planet on October 18 and the automatic docking of two unmanned spacecraft on October 30.

In the U.S. space program, 1967 was a year of milestones in applying space technology to the solution of man's problems. Progress was made in every category of applications satellites, with mounting attention being given to earth observation capabilities.

Three U.S. weather satellites were launched to maintain the efficient operation of our weather satellite system. Routine, reliable pictures of the earth's cloud cover were acquired daily and used by the Weather Bureau and the military services. Broad international acceptance of the automatic picture transmission feature of the system was shown by the establishment of 150 new APT ground stations throughout the world during the year, bringing the total such stations to 300.

On January 11, NASA launched the first successful Intelsat II satellite for the Communications Satellite Corp., providing a commercial communications link between the U.S. mainland, Hawaii, and Japan and other parts of the Far East. The transatlantic link was supplemented by an Intelsat II spacecraft on March 22, and still another was put into orbit over the Pacific on September 28. History was made in television and satellite communications on June 25, when a live telecast contributed to by 14 countries was carried to viewers in 26 countries via satellites.

On July 29, the Transit navigation satellite system was declared available for commercial and other civilian use.

As significant as any 1967 development in the national space program has been the growing attention by Government and private industry to the benefits flowing from the useful applications of space-influenced management techniques, hardware, and technology to the solution of social and economic problems.

Moreover, there has been a gradually accelerating effort to apprise the general public of the manner and the extent of how the taxpayer gains from a vigorous and continuing space investment.

A summary list of aerospace accomplishments by the United States in 1967 includes the following:

1. In its first flight test, Saturn V, the world's largest operational rocket with 7,500,000 pounds of thrust, placed an Apollo spacecraft into orbit.

2. The Lunar Orbiter program was completed, having obtained photographic coverage of the front and hidden faces of the moon, including eight prospective landing sites for astronauts.

3. Surveyor soft landed on the lunar surface and transmitted the information that its composition is a type of material which is strong enough to hold a manned spacecraft for lunar exploration.

4. Mariner V flew by within 2,600 miles of Venus and transmitted valuable data on the planet's environment.

5. Three Titan IIIC boosters successfully placed 19 payloads into high orbits, some beyond synchronous distances.

6. Actual construction was begun on the first two prototypes of the Supersonic Transport, which will enter commercial operations in the 1970's.

7. Work on the C5A, the world's largest aircraft, progressed so that the aircraft is expected to be ready for roll-out in February 1968, and make its initial flight in June of that year.

8. A new world speed record of 4,534 miles per hour was set in an X–15 rocket plane.

9. The first Applications Technology Satellite successfully completed a year of complex experiments in communications, meteorology, and environmental physics. A second spin-stabilized ATS was put into synchronous orbit over the Atlantic and obtained impressive color pictures of the Earth.

10. NASA launched three communications spacecraft for the Communications Satellite Corp. to expand commercial satellite communications over the Atlantic and Pacific.

11. The geodetic satellite Pageos provided measurements for the accurate location of geographic points around the world.

12. Two Explorer and three Observatory satellites continued measurements of the earth's environment, while another Pioneer probe was launched to measure interplanetary phenomena.

13. Biosatellite II, which was safely recovered from orbit, carried a variety of life forms around the earth for nearly 2 days, yielding information which will assist in planning for prolonged flights of astronauts.

14. The Manned Orbiting Laboratory program advanced through its engineering development phase.

15. The Outer Space Treaty entered into force; and the UN General Assembly unanimously approved an agreement on the emergency rescue and return of astronauts and spacecraft, which agreement is subject to endorsement by individual governments.

16. The NERVA nuclear reactor was successfully tested in full-power operation for more than 60 minutes, about twice as long as in previous trials, adding to the evidence that rocket reactors will be useful in future space flights. The Phoebus–1B experimental reactor was operated for 30 minutes at nearly 1,500 megawatts.

17. Major components of the SNAP 8 nuclear auxiliary power system for space underwent over 2,500 hours of endurance tests.

18. Fueling of the first SNAP 27 space electric generator heat source was completed, as was component acceptance testing of the first flight generator (unfueled). Plans call for SNAP 27 to be placed on the moon by an astronaut to provide power for lunar experiments.

19. Lasers were used to track near-earth satellites with an accuracy within 5 feet; also tests proved the feasibility of using lasers to transmit video pictures from points as distant as Mars.

20. Two Vela nuclear-test detection satellites were placed into orbit to continue test-ban treaty monitoring.

21. Three ESSA weather satellites were launched to continue an operational system established in 1966, providing daily cloud-cover photographs to ground stations throughout the world.

22. The transit navigation satellite system was declassified and made available for commercial and other civilian use.

23. The 260-inch-diameter solid rocket motor, largest single rocket motor ever tested, was successfully static-fired. The motor generated a peak 5.8 million pounds of thrust in a firing of 80 seconds duration.

24. Through 1967, 84 countries were participating in cooperative space activities with the United States. Nine satellites had been successfully launched for five foreign nations and eight other satellites were under development for future lunch. In addition, 124 scientists from 26 countries were taking part in space research at NASA centers; 19 countries were involved in cooperative sounding rocket programs; and 43 countries had automatic picture transmissions facilities to obtain cloud-cover pictures directly from U.S. satellites.

25. The U.S. launched a total of 87 spacecraft into earth orbit and on escape trajectories.

FLIGHT HIGHLIGHTS

Mr. EVINS. I think it might be well to highlight a few of these.

No. 10 says: "NASA launched three communications spacecraft for the Communications Satellite Corporation to expand commercial satellite communications over the Atlantic and Pacific."

Then they mention the Biosatellite II, which was safely recovered from orbit.

What significant discovery was made from this Biosatellite II?

FINDINGS OF BIOSATELLITE

Dr. NAUGLE. There were two fundamentally very important discoveries that were made there. Previous flight observations both by the U.S. and U.S.S.R. had revealed greater biological effects of radiation than was expected from studies on earth.

Biosatellite experiments were designed to explore this with carefully controlled conditions, using an on-board radiation source giving exact radiation dosages. The results of seven experiments showed a positive interaction between radiation and one or more other factors encountered in flight. This interaction varied between increasing the effects of radiation fourfold to decreasing the effect slightly but significantly. Several of the experiments had a background of control data indicating that vibration of the sort associated with launch and recovery did not produce similar results. These experiments indicate this area to be of great importance for future studies, following additional control studies to help pinpoint the exact factors involved. Another set of experiments were designed to study the biological effects on simple organisms of weightlessness alone. One result was apparent validation of a method used by botanists for more than a century to study the effects of gravity on the development and growth of plants. This method consists of rotating plants on a clinostat so that, over a period of time, the force of gravity affects the plants in opposing directions approximately equally. The results of Biosatellite II experiments were so similar to those obtained on the clinostat, that clinostats can now be used with greater confidence in experiments simulating weightlessness.

Mr. EVINS. The manned orbiting laboratory advanced through its engineering development phase. The NERVA nuclear reactor was successfully tested in full-power operation for more than 60 minutes, about twice as long as in previous trials, adding to the evidence that rocket reactors will be useful in future space flights.

INTERNATIONAL COOPERATION

You talk of your other achievements. Then you state:

Through 1967, 84 countries were participating in cooperative space activities with the United States. Nine satellites had been successfully launched for five foreign nations and eight other satellites were under development for future launch. In addition, 124 scientists from 26 countries were taking part in space research at NASA centers; 19 countries were involved in cooperative sounding rocket programs; and 43 countries had automatic picture transmission facilities to obtain cloud-cover pictures directly from U.S. satellites.

Tell us the nature of these cooperative programs. It is the exchange of knowledge and information, I trust, with allies and friends. I am not sure that they are giving us much in return.

Dr. NAUGLE. Mr. Chairman, let me cite one very clear example. That is the cooperative project that we have with our next-door neighbor, Canada. Canada, by virtue of its location and the scientists that are there, is very much interested in the study of ionospheric physics. We had an early cooperative project with the Canadians, the Alouette project, in which they prepared the spacecraft and we launched it. Then we discussed how we should continue that program in the future. This was about 3 years ago. We decided, because of the interest and capability which they demonstrated with the first launch, that the program should be one in which the United States interest in the study of the ionosphere would be dependent entirely on a joint program with the Canadians. That is, they will prepare the satellite which will not only carry Canadian experiments but will also carry a number of experiments prepared in the United States. Then there will be a full and complete exchange of data between both the Canadian and American experimenters. Because of this agreement, we terminated our unilateral program in the study of the ionosphere.

Mr. EVINS. You are having excellent cooperation and wide participation?

Dr. NAUGLE. That is right.

Mr. WEBB. And some savings, because we were able to avoid doing the ionospheric studies ourselves.

MAJOR UNITED STATES AND SOVIET "FIRSTS"

Mr. EVINS. Now, let us turn over to the latter part, pages 132 through 135. Let us place these in the record.

(The pages follow:)

APPENDIX B

EXECUTIVE OFFICE OF THE PRESIDENT, NATIONAL AERONAUTICS AND SPACE COUNCIL, WASHINGTON, DECEMBER 31, 1967

MAJOR U.S. AND SOVIET "FIRSTS"

One of the indexes used to compare the space programs of the United States and the Soviet Union are the "firsts" achieved by each nation. Since it measures the quantity but not the quality of achievement, such compilation can be misleading. However, when broken down into meaningful areas, it can help in judging emphasis and even relative progress if coupled with other evidence.

Regardless of whether a "first" gives either country a significant lead in a particular area of space technology, the fact of being first is significant in the formation of public opinion. In fact, regardless of actual technological com-

petence, the relative position of the United States and the U.S.S.R. in space is often judged by the "first" achieved by each.

A list of all the "firsts" scored by each side would be long and meaningless. An effort has been made to select those actions or accomplishments which seemed to be a major importance, bearing in mind that because of the closed nature of some space activities, the list of major "firsts" may be incomplete.

This list of "firsts" is divided into five broad categories of space interest. This is not a comparison of space competences but rather a cataloging based upon the timing of events.

10-YEAR MAJOR SPACE "FIRSTS," DEC. 31, 1967

SCIENCE

United States			Union of Soviet Socialist Republics		
Event	Satellite	Launch date	Event	Satellite	Launch date
Van Allen radiation belts	Explorer I	Feb. 1, 1958	Orbiting geophysical lab	Sputnik III	May 15, 1958
Earth shape measured	Vanguard I	Mar. 17, 1958	Farside lunar picture	Luna III	Oct. 4, 1959
Orbiting solar observatory	OSO I	Mar. 7, 1962	Cosmic ray measurements.	Proton I	July 16, 1965
Data from Venus	Mariner II	Aug. 27, 1962	Lunar surface pictures	Luna IX	Jan. 31, 1966
Geodetic satellite	Anna IB	Oct. 31, 1962	Lunar surface bearing test.	Luna XIII	Dec. 21, 1966
Lunar close-up pictures	Ranger VII	July 28, 1964	Venus atmospheric entry probe.	Venera IV	June 12, 1967
Mars pictures	Mariner IV	Nov. 28, 1964			
Micrometeorite satellite	Pegasus I	Feb. 16, 1965			
Lunar orbit picutes	Orbiter I	Aug. 10, 1966			
Lunar trenching	Surveyor III	Apr. 17, 1967			
Color picture of full earth face.	Dodge	July 1, 1967			
Lunar soil chemical analysis.	Surveyor V	Sept. 8, 1967			

APPLICATIONS

Active communications	Score	Dec. 18, 1958
TV pictures from space	Explorer VI	Aug. 7, 1959
Weather satellite	Tiros I	Apr. 1, 1960
Navigation satellite	Transit IB	Apr. 13, 1960
Missile detection	Midas II	May 24, 1960
Passive communications	Echo I	Aug. 12, 1960
Nuclear explosion detection.	Vela Hotel	Oct. 17, 1963

BIO AND MANNED FLIGHT

Manned orbital maneuver	Gemini III	Mar. 23, 1965	Biosatellite	Sputnik I	Nov. 3, 1957
Controlled extravehicular activity	Gemini IV	June 3, 1965	Recovery of orbited animals	Sputnik V	Aug. 19, 1960
Space rendezvous	Gemini VI, VII	Dec. 4, 1965	Manned flight and recovery	Vostok I	Apr. 12, 1961
Manned docking of two craft	Gemini VIII-Agena	Mar. 16, 1966	Multi-manned spacecraft	Voskhod I	Oct. 12, 1964
			Extravehicular activity	Voskhod II	Mar. 18, 1965

SPACE FLIGHT AND PROPULSION

Multiple payloads and orbits	Transit/Solrad	June 22, 1960	Space flight	Sputnik I	Oct. 4, 1957
Payload recovery	Discoverer XIII	Aug. 10, 1960	Earth escape spacecraft	Luna I	Jan. 2, 1959
Air snatch payload recovery	Discoverer XIV	Aug. 18, 1960	Lunar impact	Luna II	Sept. 12, 1959
Synchronous satellite	Syncom II	July 26, 1963	Orbital platform launch	Sputnik V	Feb. 12, 1961
Hydrogen-fueled rocket orbited	Centaur II	Nov. 27, 1963	Venus flyby	Venera I	Do.
Docked spacecraft maneuver	Gemini X-Agena	July 18, 1966	Mars flyby	Mars I	Nov. 1, 1962
Lunar liftoff	Surveyor VI	Nov. 7, 1957	Venus impact	Venera III	Nov. 16, 1965
Lunar-return velocity reentry	Apollo I	Nov. 9, 1967	Luna soft landing	Luna IX	Jan. 31, 1966
			Luna orbiter	Luna X	Mar. 31, 1966
			Venus soft landing	Venera IV	June 12, 1967

AUXILIARY POWER SYSTEMS

Solar cells on craft	Vanguard I	Mar. 17, 1958	Battery powered spacecraft	Sputnik I	Oct. 4, 1957
Isotope power on craft	Transit IVA	June 29, 1961			
Nuclear energy powered craft	Transit VBNI	Sept. 28, 1963			
Nuclear reactor in orbit	Snapshot I	Apr. 3, 1965			
Fuel cell use in space	Gemini V	Aug. 21, 1965			

HISTORICAL SUMMARY—UNMANNED LUNAR AND PLANETARY PROGRAMS

The U.S. unmanned lunar and planetary programs have performed a wide range of missions, with 32 launches in the first decade of U.S. spaceflight. The unmanned lunar program concludes with the launch of Surveyor VII in January, 1968. The planetary program currently has two Mariner flybys of Mars scheduled for launch in the spring of 1969.

APPENDIX C

LUNAR PROGRAM

Mission and launch date	Launch vehicle and spacecraft weight	Highlights
Able I, Aug. 17, 1958	Thor-Able, 84 lb	1st-stage failure.
Pioneer I, Oct. 11, 1958	do	Probe reached apogee of 70,700 miles. Final stage had premature shutdown.
Pioneer II, Nov. 8, 1958	Thor-Able, 87 lb	3d-stage failure.
Pioneer III, Dec. 6, 1958	Juno II, 13 lb	Probe reached apogee of 63,580 miles. Final stage had premature shutdown.
Pioneer IV, Mar. 3, 1959	Juno II, 13 lb	Passed within 37,300 miles of moon.
Atlas-Able IV, Nov. 26, 1959	Atlas-Able, 372 lb	Launch vehicle shroud failure.
Atlas-Able VA, Sept. 25, 1960	Atlas-Able, 387 lb	2d-stage failure.
Atlas-Able VB, Dec. 15, 1960	Atlas-Able, 388 lb	1st-stage failure.
Ranger III, Jan. 26, 1962	Atlas-Agena B, 727 lb	2d-stage failure. Spacecraft passed within 22,862 miles of moon.
Ranger IV, Apr. 23, 1962	Atlas-Agena B, 730 lb	1st U.S. lunar impact. Spacecraft failure.
Ranger V, Oct. 18, 1962	Atlas-Agena B, 755 lb	Missed moon by 450 miles. Spacecraft failure.
Ranger VI, Jan. 30, 1954	Atlas-Agena B, 804 lb	Impacted moon. TV system failure.
Ranger VII, July 30, 1964	Atlas-Agena D, 806 lb	Impacted moon. 1st U.S. lunar success. Returned 4,308 photos.
Ranger VIII, Feb. 17, 1965	Atlas-Agena B, 809 lb	Impacted moon. Returned 7,137 lunar photos.
Ranger IX, Mar. 21, 1965	do	Impacted moon. Returned 5,814 photos.
Surveyor I, May 30, 1966	Atlas-Centaur, 2,193 lb	1st U.S. soft landing. Returned over 11,150 photos.
Surveyor II, Sept. 20, 1966	Atlas-Centaur, 2,204 lb	Crashed on moon southeast of Copernicus crater. Spacecraft failure.
Surveyor III, Apr. 17, 1967	Atlas-Centaur, 2,280 lb	Soft landing. Performed soil sampling and returned over 6,300 photos.
Surveyor IV, July 14, 1967	Atlas-Centaur, 2,294 lb	Crashed on moon in Sinus Medii crater. Spacecraft failure.
Surveyor V, Sept. 8, 1967	Atlas-Centaur, 2,216 lb	Soft landing. Made surface chemical analysis and over 19,000 photos.
Surveyor VI, Nov. 7, 1967	Atlas-Centaur, 2,219 lb	Soft landing. Made surface chemical analysis and over 30,000 photos; lifted off and returned to lunar surface.
Surveyor VII, Jan. 7, 1968	Atlas-Centaur, 2,289 lb	Soft landing. Soil sampling; chemical analysis; over 10,000 photos (Jan. 15, 1968).
Orbiter I, Aug. 10, 1966	Atlas-Agena D, 853 lb	1st U.S. orbiting success; 206 wideangle, 11 high-resolution photos.
Orbiter II, Nov. 6, 1966	Atlas-Agena D, 861 lb	Returned 206 wide-angle and 205 high-resolution photos.
Orbiter III, Feb. 5, 1967	Atlas-Agena D, 850 lb	Returned 153 wide-angle and 144 high-resolution photos.
Orbiter IV, May 4, 1967	Atlas-Agena D, 860 lb	Returned 125 wide-angle and 145 high-resolution photos.
Orbiter V, Aug. 2, 1967	Atlas-Agena D, 862 lb	Returned 212 wide-angle and 212 high-resolution photos.

PLANETARY PROGRAM

Mariner I, July 22, 1962	Atlas-Agena B, 446 lb	Venus probe; launch vehicle failure.
Mariner II, Aug. 26, 1962	Atlas-Agena B, 447 lb	1st successful flyby of Venus on Dec. 14, 1962, within 21,600 miles of surface; temperature, and magnetic field and charged particle measurements.
Mariner III, Nov. 5, 1964	Atlas-Agena D, 575 lb	Mars probe. Launch vehicle shroud failure.
Mariner IV, Nov. 28, 1964	do	Passed 6,120 miles from Mars on July 14, 1965; measured atmospheric density; returned 21 photos.
Mariner V, June 14, 1967	Atlas-Agena D, 540 lb	Passed within 2,600 miles of Venus on Oct. 19, 1967; measured magnetic field and atmospheric properties.

AUTHORIZING LEGISLATION

Mr. EVINS. Mr. Chairman, we note that since we met yesterday the Houe authorizing committee has had a markup on your authorization bill for next year. They made some significant changes and reductions.

Do you want to comment on the $153 million cutback in various programs?

Mr. WEBB. Yes, Mr. Chairman.

I would hope that that markup would not be taken as a guide by this committee. There is action, of course, in the Senate to reconsider some of those items. I would hope very much that the authorizing legislation that does eventually gain the approval of the Congress would restore most of those items.

MAJOR CUT IN NUCLEAR ROCKETS

Mr. EVINS. The major large cut was in the nuclear rockets program, from $60 million to $11.7 million. You have the advanced missions, $5 million programed, and it was cut in half to $2.5 million.

Mr. WEBB. I do not believe that in the end the Congress will want to turn down the President's recommendation for NERVA I. I have stated that the U.S.S.R. is building a rocket larger than the Saturn V. The NERVA I is the only project in the program that permits us, by 1975 or 1976, to increase the carrying capacity of the Saturn V. I believe that this will be given reconsideration in the Congress.

GENERAL STATEMENT ON FISCAL YEAR 1969 BUDGET

Mr. EVINS. We will take a look at these justifications. Mr. Reporter, place in the record this general statement.

(The statement follows:)

GENERAL STATEMENT

The National Aeronautics and Space Administration was established on October 1, 1958, pursuant to the National Aeronautics and Space Act of 1958, approved on July 29, 1958. The act states that the policy and purpose of the U.S. activities in space will be: To conduct space and aeronautical activities for peaceful purposes for the benefit of all mankind. These activities should contribute materially to: The expansion of human knowledge in the atmosphere and space; the improvement and usefulness of aeronautical and space vehicles; the development and operation of space vehicles; the establishment of long-range studies, the preservation of U.S. leadership in aeronautics and space technology and utilization; the dissemination of pertinent information gained in the program to civil and military agencies; the cooperation with other nations in aeronautics and space activity pursuant to peaceful interests; and the effective utilization of scientific and engineering talents and facilities of the Nation.

A total funding program of $4,370,400,000, to be financed by new obligational authority, is requested to support current and proposed programs.

The industrial community, under contracts with the NASA, will continue to carry forward the prime design, development, and fabrication effort of the NASA program. Specific elements of the activity will continue to be pursued within NASA installations, other Government agencies, universities, and research contractors which have the necessary level of expertise in special areas of engineering and science. The major elements of the program fall within the following categories:

Manned Space Flight.—A program for the continued development and demonstration of a capability for manned space operations and exploration; to maintain progress in manned space flight; and to provide information required for future decisions concerning follow-on space programs.

Space Science and Applications.—A program of unmanned space flight involving: (1) Scientific investigations of the earth, solar system, stars and space environment; compiling new knowledge in astronomy; planetary and interplanetary studies and experiments on the affects of space environment on living organisms; and (2) the adapting of space technology so acquired for the direct benefit of mankind in areas such as weather, communications, navigation, traffic control, geodesy, meteorology, and earth resources.

Advanced Research and Technology.—A continuing program to provide the technological base for significant future aerospace missions.

Tracking and Data Acquisition.—A program for providing the support required by the worldwide NASA manned and unmanned space flight programs.

Detailed justification of the fiscal year 1969 budget estimate for the total program of $4,370,400,000 is provided in the following three volumes:

Volume	*Amount*
II. Research and development	$3,677,200,000
III. Construction of facilities	45,000,000
IV. Administrative operations	648,200,000
Total	4,370,400,000

Reimbursement at Eastern Test Range.—A new financial arrangement will increase the NASA reimbursement to the Air Force Eastern Test Range from $25.2 million to $51.4 million in fiscal year 1969. This agreement, based on a Bureau of the Budget analysis of Eastern Test Range costs and workload, recognizes the impact of NASA launch support requirements on the cost of the Eastern Test Range support activities and provides for NASA reimbursement for range instrumentation ships and aircraft, mainland and down-range instrumentation sites for tracking and communications, data processing, and mission operations support.

SUMMARY OF APPROPRIATIONS

Mr. Evins. Your summary gives your full appropriation. The research and development last year was $3,925,000,000 and in fiscal 1969 you are requesting $3,677,200,000.

Construction of facilities goes from $35,900,000 to $45 million. Administrative operations, which we discussed along with construction, goes from $628 million as against $648,200,000. Place in the record the summary pages 1 through 3 and pages RD7 through 9.

(The pages follow:)

SUMMARY OF APPROPRIATIONS

[In thousands of dollars]

Appropriation	Public Law 89–555 fiscal year 1967	Public Law 90–131 fiscal year 1968	Fiscal year 1969
Research and development	4,245,000	3,925,000	3,677,200
Construction of facilities	83,000	35,900	45,000
Administrative operations	640,000	628,000	648,200
Total	4,968,000	4,588,900	4,370,400

SUMMARY OF APPROPRIATIONS (ADJUSTED)

[In thousands of dollars]

	Total	Research and development	Construction of facilities	Administrative operations
Fiscal year 1967:				
Independent Offices Appropriation Act, 1967 (80 Stat. 675)	4,968,000	4,245,000	83,000	640,000
NASA appropriation transfers (80 Stat. 676)		−9,900	2,000	7,900
Transfer to "Operating expenses, Public Buildings Service," General Services Administration (80 Stat. 674)	−417			−417
Appropriation (adjusted)	4,967,583	4,235,100	85,000	647,483
Fiscal year 1968:				
National Aeronautics and Space Administration Appropriation Act, 1968 (81 Stat. 384–385)	4,588,900	3,925,000	35,900	628,000
NASA appropriation transfers (81 Stat. 385)		−14,400	1,900	12,500
Transfer to "Operating expenses, Public Buildings Service," General Services Administration (81 Stat. 348)	−127			−127
Appropriation (adjusted)	4,588,773	3,910,600	37,800	640,373
Fiscal year 1969: Appropriation request	4,370,400	3,677,200	45,000	648,200

SUMMARY OF BUDGET PLAN BY APPROPRIATION BY BUDGET ACTIVITY

[In thousands of dollars]

Appropriation title	Total	Manned space flight	Scientific investigations in space	Space applications	Space technology	Aircraft technology	Supporting activities
Fiscal year 1967	4,908,096	3,393,516	564,394	110,205	387,769	105,376	346,836
Research and development	4,175,100	3,024,000	481,294	91,486	235,570	35,900	306,850
Construction of facilities	86,411	45,057	4,688		8,590	21,010	7,066
Administrative operations	646,585	324,459	78,412	18,719	143,609	48,466	32,920
Fiscal year 1968	[1] 4,648,773	3,158,608	508,695	134,303	398,868	122,681	325,618
Research and development	[1] 3,970,600	[1] 2,809,200	433,523	114,337	256,890	66,800	289,850
Construction of facilities	37,800	25,665	3,595		2,115	3,170	3,255
Administrative operations	640,373	323,743	71,577	19,966	139,863	52,711	32,513
Fiscal year 1969	4,370,400	2,824,812	479,530	147,733	410,061	131,435	376,829
Research and development	3,677,200	2,483,400	405,522	127,338	265,240	76,900	318,800
Construction of facilities	45,000	18,659	1,200		386		24,755
Administrative operations	648,200	322,753	72,808	20,395	144,435	54,535	33,274

[1] Includes $60,000,000 of prior year funds applied to fiscal year 1968 budget plan.

SUMMARY OF RESEARCH AND DEVELOPMENT BUDGET PLAN BY PROGRAM BY COGNIZANT OFFICE

[In thousands of dollars]

Budget activity	Office or program	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
	Manned space flight	3,024,000	2,809,200	2,483,400
1a	Gemini	15,200		
1b	Apollo	2,922,600	[1] 2,556,000	2,038,800
1c	Apollo applications	80,000	253,200	439,600
1d	Advanced mission studies	6,200		5,000
	Space science and applications	576,100	552,850	538,200
2a	Physics and astronomy	129,800	142,950	141,900
2b	Lunar and planetary exploration	184,150	141,500	107,300
2d	Launch vehicle development	31,200		
([2])	Launch vehicle procurement	117,650	127,100	128,300
2c	Bioscience	42,000	41,800	48,500
3	Space applications	71,300	99,500	112,200
	University affairs:			
6b	Sustaining university program	31,000	10,000	10,000
	Advanced research and technology	268,150	318,700	336,800
4	Basic research	21,401	21,465	22,000
4	Space vehicle systems	33,909	35,000	35,300
4	Electronics systems	33,597	39,200	39,400
4	Human factor systems	16,265	20,985	21,700
4	Space power and electric propulsion systems	40,440	44,000	44,800
4	Nuclear rockets	53,000	54,000	60,000
4	Chemical propulsion	33,638	37,250	36,700
5	Aeronautical vehicles	35,900	66,800	76,900
6a	Tracking and data acquisition	270,850	275,850	304,800
6c	Technology utilization	5,000	4,000	4,000
	Total budget plan	4,175,100	[1] 3,970,600	3,677,200

[1] Includes $60,000,000 of prior year funds applied to fiscal year 1968 budget plan.
[2] Funds for the procurement of launch vehicles are statistically distributed to unmanned flight programs (e.g., physics and astronomy, space vehicle systems).

NEW RESEARCH AND DEVELOPMENT PROGRAMS AND PROJECTS

The fiscal year 1969 budget contains $38 million for the following new research and development projects:

Lunar and planetary exploration program

Mariner Mars 1971 ..... $18,000,000

The objectives of the Mariner Mars 1971 project are to place two spacecraft in orbit about Mars to measure the physical, chemical, and thermal properties of its surface and atmosphere and the variations of these properties with the season and time of day. This project will also advance spacecraft technology particularly for orbital missions about the planets. The scientific instruments for the Mariner 1971 missions will be similar to those carried by Mariner 1969. However, the 1971 mission concept is a major advance because it provides for orbital operations to make measurements closer to the surface and for longer periods of time, whereas the Mariner Mars 1969 flyby mission will have a short encounter time at a farther distance from the planet.

The Mariner Mars 1971 spacecraft will be similar to the Mariner Mars 1969 spacecraft and will use the spare components and proof test model from that project. The funds requested for fiscal year 1969 will provide for a detailed system design, procure additional Mariner Mars 1969 subsystems, provide for modification of Mariner Mars 1969 hardware, and develop and test prototypes of critical subsystems.

Titan Mars 1973 ..... $20,000,000

The objectives of the Titan Mars 1973 project are to continue to measure the physical and chemical properties of Mars from orbit, and to send a survivable lander through the atmosphere to the surface of Mars. These measurements will increase the topographic and thermal mapping information; establish the absence or the presence and distribution of water on the surface of Mars; measure the trace constituents of the atmosphere; determine ionosphere properties and distribution; and obtain density, temperature, and composition profiles of the atmosphere by direct measurements. The orbiter spacecraft developed for this mission will be used for future planetary missions. Critical technologies and sterilization techniques will be developed for systems to be landed on the surface of Mars in later missions. The project will provide for two missions to Mars. Each mission will consist of a small survivable orbiter and a lander launched on a Titan vehicle in 1973. The funds requested for 1969 will provide for the preparation of functional specifications; initiation of detailed system designs; and development, fabrication, and testing of engineering models of critical subsystems for both the orbiters and probes.

PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	Budget plan (amounts for research and development actions programed)			Costs and obligations		
	1967 actual	1968 estimate	1969 estimate	1967 actual	1968 estimate	1969 estimate
Program by activities:						
Direct program:						
1. Manned space flight:						
(a) Gemini	15,200			100,383	6,100	
(b) Apollo	2,922,600	2,556,000	2,038,800	2,845,089	2,509,700	2,132,700
(c) Apollo applications	80,000	253,200	439,600	62,505	179,800	435,000
(d) Advanced mission studies	6,200		5,000	10,011	6,000	4,300
2. Scientific investigations in space:						
(a) Physics and astronomy	160,837	175,817	175,922	202,071	184,100	176,100
(b) Lunar and planetary exploration	201,005	150,666	113,900	234,031	163,000	118,000
(c) Bioscience	42,000	45,700	54,400	46,031	46,500	52,200
(d) Launch vehicle development	77,452	61,340	61,300	95,069	72,900	62,200
3. Space applications	91,486	114,337	127,338	107,871	112,200	127,100
4. Space technology	235,570	256,890	265,240	246,384	252,200	273,400
5. Aircraft technology	35,900	66,800	76,900	41,039	50,000	67,800
6. Supporting activities:						
(a) Tracking and data acquisition	270,850	275,850	304,800	317,914	306,100	304,400
(b) Sustaining university program	31,000	10,000	10,000	36,184	35,800	27,000
(c) Technology utilization	5,000	4,000	4,000	4,166	4,700	4,200
Total direct program costs, funded	4,175,100	3,970,600	3,677,200	4,349,148	3,929,100	3,784,400
Reimbursable program:						
1. Manned space flight:						
(a) Gemini	1,257			1,369	3,946	
(b) Apollo	373	175	175	631	607	175
(c) Apollo applications		400	400		273	400
2. Scientific investigations in space:						
(a) Physics and astronomy	12,464	7,477	7,673	6,231	8,177	7,673
3. Space applications	49,415	17,500	31,500	27,179	53,757	31,500
4. Space technology	39,796	40,579	45,252	40,116	40,701	45,252
5. Aircraft technology	2,147	5,750	2,000	2,207	8,463	2,000
6. Supporting activities:						
(a) Tracking and data acquisition	1,000	619	500	1,657	1,031	500
(c) Technology utilization	139			150	1	
Total reimbursable program costs	106,591	72,500	87,500	79,540	116,956	87,500
Total program costs, funded	4,281,691	4,043,100	3,764,700	4,428,688	4,046,056	3,871,900

Change in selected resources [1]				−99,046	153,159	−107,200
Total	4,281,691	4,043,100	3,764,700	4,329,642,	4,199,215	3,764,700
Financing:						
Receipts and reimbursements from:						
11 Federal funds	−93,717	−68,425	−75,425	−93,717	−68,425	−75,425
14 Non-Federal sources [2]	−12,874	−4,075	−12,075	−12,874	−4,075	−12,075
21 Unobligated balance available, start of year:						
For completion of prior year budget plans				−203,665	−156,715	
Available to finance new budget plans		−60,000			−60,000	
22 Unobligated balance transferred from other accounts				−1,002		
23 Unobligated balance transferred to other accounts					600	
24 Unobligated balance available, end of year:						
For completion of prior year budget plans				156,715		
Available to finance new budget plans	60,000			60,000		
New obligational authority	4,235,100	3,910,600	3,677,200	4,235,100	3,910,600	3,677,200
New obligational authority:						
40 Appropriation	4,245,000	3,925,000	3,677,200	4,245,000	3,925,000	3,677,200
41 Transferred to other accounts	−9,900	−14,400		−9,900	−14,400	
43 Appropriation (adjusted)	4,235,100	3,910,600	3,677,200	4,235,100	3,910,600	3,677,200
Relation of obligations to expenditures:						
10 Total obligations				4,329,642	4,199,215	3,764,700
70 Receipts and other offsets (items 11–17)				−106,591	−72,500	−87,500
71 Obligations affecting expenditures				4,223,052	4,126,715	3,677,200
72 Obligated balance, start of year				1,837,620	1,573,457	1,695,672
74 Obligated balance, end of year				−1,573,457	−1,695,672	−1,521,572
90 Expenditures				4,487,215	4,004,500	3,851,300
Expenditures are distributed as follows:						
01 Out of current authorizations				2,868,570	2,555,400	2,448,200
02 Out of prior authorizations				1,618,645	1,449,100	1,403,100

Note: Reconciliation of budget plan to obligations:

	1967 actual	1968 estimate	1969 estimate
Total budget plan	4,281,691	4,043,100	3,764,700
Deduct portion of budget plan to be obligated in subsequent years	113,369		
Add obligations of prior year budget plans	161,320	156,115	
Total obligations	4,329,642	4,199,215	3,764,700

[1] Selected resources as of June 30 are as follows:

	1966	1967 adjustments	1967	1968	1969
Stores	35,257	2,368	39,097	39,097	39,097
Unpaid undelivered orders	1,147,462		1,043,395	1,196,554	1,089,354
Advances	6,563		10,112	10,112	10,112
Total selected resources	1,189,282	2,368	1,092,604	1,245,763	1,138,563

[2] Reimbursements from non-Federal sources are receipts for services performed on Communications Satellite Corp. projects (42 U.S.C. 2473).

OBJECT CLASSIFICATION

[In thousands of dollars]

		1967 actual	1968 estimate	1969 estimate
	Direct obligations:			
22.0	Transportation of things	15,082	16,400	15,000
23.0	Rent, communications, and utilities	45,250	45,000	44,000
24.0	Printing and reproduction	1,590	1,600	1,400
25.1	Other services	3,719,496	3,581,759	3,200,900
25.2	Services of other agencies	167,869	164,000	160,900
26.0	Supplies and materials	157,564	152,000	140,000
31.0	Equipment	125,354	106,200	100,000
32.0	Lands and structures	13,466	12,300	12,000
41.0	Grants, subsidies, and contributions	3,603	3,000	3,000
	Total direct obligations	4,249,274	4,082,259	3,677,200
	Reimbursable obligations:			
22.0	Transportation of things	95	100	100
23.0	Rent, communications, and utilities	38	30	30
24.0	Printing and reproduction	9	10	10
25.1	Other services	72,309	105,316	78,760
26.0	Supplies and materials	6,882	10,000	7,500
31.0	Equipment	1,033	1,500	1,100
32.0	Lands and structures	2		
	Total reimbursable obligations	80,368	116,956	87,500
99.0	Total obligations	4,329,642	4,199,215	3,764,700

Mr. EVINS. Let us turn to your main item of research and development, $3,677,200,000.

Mr. WEBB. There are very, very few new programs here, Mr. Chairman. The large funding goes to Apollo, as you know, the $2,038,800,000. Then we will be moving forward, with your approval, to the Apollo applications program where there is an increase from $253.2 million to $439.6 million as we begin to prepare for the flights using Apollo equipment after the landing on the moon. Most of the other programs have been reduced. You do notice that in space applications dealing with earth sensing, with the communication satellite, the work with weather satellites, and so forth, that there is an increase from $99.5 million to $112.2 million. By and large, there are very, very few other increases. In the field of aeronautics there is an increase from $66,800,000 to $76,900,000. We discussed yesterday some of the noise reduction work and some of the advanced work in the field of vertical and short takeoff landing aircraft.

APOLLO PROGRAM

Mr. EVINS. The Apollo program's objectives have been determined The commitment has been made. There have been no major cutbacks in this program. It is carrying on a policy decision that has been reaffirmed over a period of years.

Mr. WEBB. Yes. During fiscal year 1969 we will be flying the first of the large Saturns, manned; and then we hope to achieve two or three additional large Saturn flights before the end of fiscal year 1969.

We hope to fly a total of nine Saturn V flights by the end of calendar year 1969.

Mr. EVINS. Tell us again for the record how many Saturn vehicles you have in your checkout stages and how many on order.

CURRENT STATUS OF SATURN VEHICLES

Dr. MUELLER. We have on the Saturn I vehicles in the Apollo program 12 vehicles in various stages of checkout and on order. That is the total order. The first four of these have been flown.

Mr. EVINS. You have 12 purchased, and four have been flown. That means eight are available?

Dr. MUELLER. That is correct.

Mr. WEBB. Available or to become available as they are completed.

Dr. MUELLER. That is right.

Mr. EVINS. This is the Saturn I?

Dr. MUELLER. Now, the Saturn V. There is a total order of 15, of which we have flown one. We have seven through the manufacturing cycle. We are in tests with parts of Saturn V on the No. 4 vehicle.

Mr. EVINS. You have ordered 15 and one has flown. How many do you have at Kennedy?

Dr. MUELLER. One Saturn V has flown, two are at Kennedy, three more are in final stages of checkout back in the manufacturing end. Manufacturing is complete on the seventh one.

Mr. EVINS. Are the other on order?

Dr. MUELLER. We have the additional eight Saturn V vehicles in the Apollo program on order.

NONLUNAR AREAS OF MANNED SPACE FLIGHT

Mr. WYMAN. Mr. Webb, is there any other place, assuming we fly to the moon, for man to fly, too? Do you have projected or can you think of, or can you contemplate any other place than the moon?

Mr. WEBB. Mr. Wyman, I think there are two other areas that are quite important. The first one toward which our Apollo applications program is directed is near earth orbital operations where we are examining the earth; where we are looking at the capability for stations that can handle relay of communications traffic including telephone, for all kinds of record traffic, and wherein the energies arriving at the earth from various parts of space and many parts of the spectrum can be carefully measured, and where experiments such as Dr. Naugle has mentioned with respect to the biosciences may be carried out. It is of some significance that different types of cells respond to radiation in different ways under zero gravity conditions. This may affect how we use radiation on different forms of life, including possibly in treating human beings at some future time. Now, the second area is beyond the moon. The studies that we have made fairly intensively over the last two or three years show that at some time when we feel it is important to do so men could travel outward to Mars and Venus.

This could be accompanied with unmanned operations out as far as Jupiter or in close to the sun. So in the next 100 years or so you are going to see man, either directly or with his instruments, moving through the whole solar system from the sun outward as far as Jupiter. But our present plans are to return closer in to the earth and use the Saturn V booster for a payload that would fly, about 1973, and begin to develop these capabilities. Then perhaps we could move to a syn-

chronous orbital station for which the same booster could be used. About the same amount of energy is required to get a workshop into synchronous orbit as is required to put a payload to the moon.

(Discussion off the record.)

MANNED FLIGHT BEYOND THE MOON

Mr. WYMAN. For all practical purposes, in terms of manned flight beyond the Apollo program, the projections are to come back to between the moon and the earth. Really there isn't in the present state of our technology any real prospect of flying a man, at the end of a rocket, out beyond the moon anywhere, for the next decade at least?

Mr. WEBB. There is none.

Mr. WYMAN. Thank you.

FUNDING REQUEST FOR APOLLO

Mr. EVINS. This table on page RD–11 shows the breakdown of appropriations for the Apollo program, $2,038,800,000.

Mr. WEBB. There is a breakout of spacecraft, Saturn I–B, Saturn V, engine development and mission support.

Mr. EVINS. During 1969 five manned Saturn V launches are scheduled and represent progressive steps toward the manned lunar landing. Fiscal year 1969 funding is required to support this flight schedule and the accomplishment of the national goal.

Then you have the summary of resources requirements.

The $69,100,000 is for Saturn I–B, $818,200,000 is for Saturn V.

Mr. WEBB. The $820.1 million is all for the spacecraft in the Apollo program, the main line Apollo program.

Dr. MUELLER. The command and service and lunar modules.

Mr. EVINS. Mission support is $331,400,000.

Dr. MUELLER. Yes.

Mr. EVINS. This is going to have a $2,038,800,000 total for research in this area.

Mr. WEBB. For the Apollo program.

Mr. TALCOTT. Off the record.

(Discussion off the record.)

DESCRIPTION OF APOLLO LUNAR MISSION

Mr. EVINS. You state with respect to the lunar mission:

On the lunar mission, the spacecraft, with the Saturn V 3d (S–IVB) stage still attached, will be inserted into a 100 nautical mile earth-parking orbit. After detailed checkout, the Apollo astronauts will separate the command, service, and lunar modules from the S–IVB stage. Necessary midcourse corrections, using the service module propulsion system, will keep the spacecraft on the correct path to the moon. As the Apollo spacecraft nears the moon, the service module propulsion system will again be fired to inject it into lunar orbit. After a checkout of all systems, two of the three astronauts will transfer from the command module to the lunar module, separate from the command craft, which will remain in lunar orbit, and land on the moon. After a stay of up to 1 day, during which the two astronauts will conduct observations, implant experiment equipment and instrumentation, and collect lunar samples, the astronauts will return to the orbiting command module and reenter it. The ascent stage of the lunar module will be left in lunar orbit. The astronauts will then restart the service module propulsion system to escape from lunar orbit. After

a coasting period, the service module propulsion system will be restarted for the final time to place the command module into the reentry corridor. The service module will then be jettisoned and the command module will reenter the earth's atmosphere.

This is quite a task and quite a challenge. Will you be able to do all of that, Dr. Mueller?

Dr. MUELLER. I expect we will.

Mr. WEBB. I think at this point, Mr. Chairman, we should emphasize that the capability to do what you have read gives us a vast capability to do many other things that are very important to this Nation at the present time. The ability to perform a lunar landing is a demonstration of the capability that has been built.

TARGET DATE FOR LUNAR LANDING

Mr. EVINS. We had a setback because of the tragedy in which the astronauts were lost. Now you are back on schedule and have regained your momentum. What is your target date?

Dr. MUELLER. We expect to accomplish the lunar landing and return, barring any further major problem, by the end of 1969. We are aiming for the last half of 1969.

Mr. EVINS. I thought it was 1970.

Dr. MUELLER. No, sir.

Mr. WEBB. No, sir. Mr. Chairman, what that means, as I indicated in my statement at the beginning of these hearings, is that we believe the equipment we have built is good; and we believe the time since the Apollo fire has been well used to work out any problems that then remained and to introduce certain improvements in Block II spacecraft which that interval permitted us to introduce.

We have confidence that every one of these flights through 509 should be successful. Now, if they are all successful, we expect to do this lunar landing by 509. If we have any major failure and if our judgment with respect to the capability of this equipment is wrong, bearing in mind that the margin between success and failure is very small, then we may be delayed beyond 1969. There are no backup funds, and there are no time margins in this program. We had previously been able to operate on the basis that we had a certain flexibility of funds; if we encountered a major problem we would not have to come back for a supplemental. We are pretty much in the position now that if anything of any real significance occurs we are going to have to come back to you for a supplemental, which in itself will take time.

Mr. EVINS. Six service modules are scheduled for delivery in 1969 and integration and checkout will proceed on 11 others.

Dr. MUELLER. That is right.

19 BLOCK II CSM'S IN PROGRAM

Mr. EVINS. A total of 19 Block II flight command and service modules are included in the Apollo program. Fiscal year 1969 funding also provides for continued manufacturing, test launch preparation of the lunar module, post-flight analysis and associated hardware for experiments to be conducted on the lunar surface. Six flight articles will be delivered in fiscal year 1969. The six remaining articles will be

in the process of assembly, systems integration and checkout. Doctor, explain that.

Dr. MUELLER. These are the Lunar Modules that will actually fly men in them, either in preparing to go to the moon or around the moon and on to the lunar surface. Six Lunar Modules are scheduled.

Mr. EVINS. The articles and Modules refer to the same item?

Dr. MUELLER. Yes, sir.

NEED FOR SIX LM'S

Mr. WYMAN. Mr. Chairman, why do we need six; why not three? Is this because maybe one of them might have bugs in it, or what is the reason?

Dr. MUELLER. We have the capability of flying a series of missions that lead up to the development and checkout of each of the planned procedures as well as the flight articles before you carry out the lunar landing. In order to carry forward this program which we have outlined for you, including 509, providing for the contingency that we may not be able to work the bugs out of the equipment in the flights before 1969, we need to continue to supply these modules. We do not reuse modules. Each one of these flights is made with a new module because the Lunar Module is the first flight article which we do not and cannot return to earth with. It stays in orbit, or around the lunar surface.

ENGINES IN SATURN V

Mr. EVINS. How many engines is your Saturn V powered by?

Dr. MUELLER. The Saturn V is powered by five engines in the first stage, and then five engines in the second stage and one engine in the third stage.

Mr. EVINS. With respect to the Saturn I–B, you state that the Apollo program includes 12 Saturn I–B vehicles.

Dr. MUELLER. That is correct. Those are the launch vehicles themselves. Each one of the first stage has eight engines, the second stage has one engine.

Mr. WEBB. Mr. Chairman, each one of the five engines in the Saturn V has the equivalent of the eight engines in the Saturn I.

Mr. EVINS. The Saturn V is the most powerful member of the Saturn family of launch vehicles and is composed of three propulsion stages and an instrument unit. The vehicle is designed to boost payloads up to 140 tons into low earth orbit and to send payloads up to 50 tons on lunar missions.

Dr. MUELLER. Yes, sir. Two of the largest payload capabilities that mankind has invented.

Mr. EVINS. Reviewing this further, the Saturn V schedule provides for 15 launch vehicles for unmanned qualification flights, manned lunar mission simulations, and manned lunar missions. Now, break those down.

Dr. MUELLER. We had one successful unmanned flight. We expect to have either two or three unmanned flights in this first set of 15.

Mr. EVINS. How many more unmanned flights will there be before you test the manned flight?

MANNED FLIGHTS OF SATURN V

Dr. MUELLER. One more unmanned flight, or possibly two. Then we will go into the manned flights. We will have some six or seven manned flights by the end of 1969, and we will continue to fly men on the Saturn V in the Apollo program until we have successfully carried out the lunar landing.

Mr. WEBB. Now, Mr. Chairman, I think it is very important to recognize here that we do have the safety features in this program, that if we run into serious difficulty with the Saturn V we could use the Saturn IB to continue to check out and use the Apollo spacecraft in Earth orbit. We wish to shift rapidly from the small Saturn over to the large one on the flyout flights that we had indicated, including the ninth flight by the end of 1969. But we must be prepared for the fact that something could develop in the Saturn V that would prevent us from operating on that schedule. In that case, we will not make the shift from the little Saturn to the big Saturn but will exercise the spacecraft in Earth orbit, using the smaller vehicle. We have this necessary safety feature built into the combination of these two boosters.

APOLLO PROGRAM JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record, pages RD1–1 through RD1–19 (The pages follow:)

RESEARCH AND DEVELOPMENT, FISCAL YEAR 1969 ESTIMATES

OFFICE OF MANNED SPACE FLIGHT, APOLLO PROGRAM

Program objectives and justification

The objective of the Apollo program is the creation of a viable manned space flight capability to achieve a position of leadership in space for the United States. The program, while focused on the accomplishment of manned lunar landing and return, is not solely directed toward this goal. Apollo represents the development of an extensive operational capability, including lunar exploration, to assure this country's preeminence in manned space flight. Directing itself toward achieving this position in leadership, the program is developing a spacecraft that is capable of supporting men in space for periods up to 2 weeks, operating at lunar distances, and conducting operations on the lunar surface. Leadership is also attained through the program's development of the Saturn IB and Saturn V vehicles, which are presently this country's two most powerful launch vehicles. The Saturn IB is capable of inserting a 20-ton payload into low Earth orbit. The Saturn V can launch nearly a 140-ton payload into Earth orbit, and up to 50 tons to lunar distances.

The technology that forms the basis of this capability results from the melding of a large complex of development, manufacturing, test, and launch facilities with the knowledge and experience of a unified team of people brought together from the Government, industry, and universities. The skills, resources, and technology created, assembled, and developed for Apollo are a versatile and powerful national asset.

The Apollo program is divided into unmanned flights, manned earth orbital flights, and manned lunar flights. Three unmanned flights conducted during 1966 qualified the Saturn IB for manned missions. These flights demonstrated the structural integrity and the compatibility of the spacecraft and adapter with the launch vehicles; the firing and restarting of the spacecraft engines; the ability of the command module heatshield to withstand high speed reentry; and the operational readiness of the ground support and recovery crews.

The problems and progress of the Apollo program during the past year are mirrored in two events. On January 27, 1967, during a countdown simulation

at Cape Kennedy, a flash fire occurred in the Apollo spacecraft, causing the deaths of the astronaut crew. The accident restrained progress toward accomplishing Apollo's objective of a successful manned lunar landing and return before the end of the decade, and forcefully focused full national attention on the ever-present realities of the hazards inherent in the exploration of space. The command module fire has delayed the first manned flight by over 1 year as design changes and modifications are made to the spacecraft. These modifications represent a concentrated effort to eliminate the possibility of a fire or to preclude its propagation.

Momentum was reestablished on November 9, 1967, with the successful "all-up" unmanned test of the first Saturn V launch vehicle. This "all-up" test produced a substantial number of "firsts" for the Apollo program and this country. It represented the first launch of the S–IC and S–II stages of the vehicle, the first flight of the powerful F–1 engine which produces over 1.5 million pounds of thrust, the heaviest weight (nearly 140 tons) ever placed into orbit, the initial qualification of the Apollo heatshield to withstand the 25,000 mph speed and 4,500°F temperature of reentry from lunar distances, and the recovery of a payload from the greatest distance in space—over 11,000 miles. The test also demonstrated the ability of the S–IVB stage to restart in Earth orbit. Each is an essential part of the manned lunar landing mission.

The Saturn IB vehicle that was to launch the first manned Apollo spacecraft will now be used for the initial flight test of the lunar module. This unmanned test is scheduled for early in 1968. A second Saturn IB launch of an unmanned lunar module is also planned for 1968. The third Saturn IB launch planned for 1968 will be the first manned flight of the Apollo command and service module.

Two more unmanned flights of the Saturn V vehicle are scheduled for 1968, to qualify the Saturn V for manned flight. This first manned test is presently planned for the fourth Saturn V vehicle and will demonstrate the operational reliability and compatibility of the various modules in space. The missions will include lunar mission flight simulations, and docking and crew transfer between the command module and lunar module.

While the major portion of lunar mission simulation and training is planned to be conducted on Saturn V vehicles, the Apollo mission planning provides for alternative action. If technical difficulties develop in qualifying the Saturn V for manned Command and Service Module and Lunar Module flight, such operations will be conducted with dual launches of Saturn IB vehicles. During these paired launches, one vehicle will orbit the LM, while the other will orbit the manned CSM which will rendezvous and dock with the LM.

During 1969, five manned Saturn V launches are scheduled and represent progressive steps toward the manned lunar landings. The fiscal year 1969 funding to support the Apollo program is contained in the following tables:

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Spacecraft	$1,310,600,000	$1,095,000,000	$820,100,000
Saturn IB	225,626,000	146,600,000	69,100,000
Saturn V	1,098,154,000	998,900,000	818,200,000
Engine development	49,800,000	18,700,000	
Mission support	238,420,000	296,800,000	331,400,000
Total	2,922,600,000	2,556,000,000	2,038,800,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
John F. Kennedy Space Center, NASA	$213,050,000	$354,600,000	$369,600,000
Manned Spacecraft Center	1,395,605,000	1,151,600,000	889,800,000
Marshall Space Flight Center	1,279,636,000	1,001,900,000	734,000,000
Goddard Space Flight Center	273,000	100,000	200,000
Langley Research Center	81,000		
NASA Headquarters	33,955,000	46,200,000	45,000,000
Electronics Research Center		1,600,000	200,000

BASIS OF FUND REQUIREMENTS

SPACECRAFT

	1967	1968	1969
Command and service modules	$532,815,000	$455,300,000	$340,200,000
Lunar module	539,272,000	399,600,000	278,200,000
Spacecraft support	119,937,000	113,000,000	102,500,000
Guidance and navigation	82,977,000	66,600,000	44,000,000
Integration, reliability, and checkout	35,599,000	60,500,000	55,200,000
Total	1,310,600,000	1,095,000,000	820,100,000

The Apollo spacecraft is composed of three modules: the command module, the service module, and the lunar module. The command module, which is the recoverable portion of the Apollo spacecraft, houses the three astronauts in a controlled environment. The cone-shaped command module contains life support and communication systems, as well as control systems for inflight and reentry maneuvering. The service module contains the propulsion system used for making trajectory corrections and electrical and other utility systems supporting the command module. The service propulsion system engine provides 22,000 pounds of thrust and can be restarted up to 50 times. The lunar module is a self-contained vehicle consisting of a descent stage with landing legs and an ascent stage with a habitable two-man cabin. Each stage is equipped with its own engine. During the launch phase, the lunar module is enclosed by an adapter, which also provides structural support when the spacecraft is joined to the launch vehicle.

An Apollo spacecraft, launched by a Saturn V, will accomplish the national goal of a manned lunar landing and return. On this mission, the spacecraft, with the Saturn V 3d (S–IVB) stage still attached, will be inserted into a 100 nautical mile earth-packing orbit. As the spacecraft orbits the earth, a thorough checkout will be conducted by the crew and the worldwide ground support network to verify that all the equipment is operating safely and reliably, and is ready for the commitment to the lunar mission. When the crew and systems readiness has been fully confirmed, the Saturn V 3d stage will be restarted to accelerate the spacecraft to the velocity necessary to escape the earth's gravity and to move into a translunar trajectory. After detailed checkout, the Apollo astronauts will separate the command and service module from the combination of the lunar module, S–IVB, and instrument unit, turn the craft around, and dock with the lunar module. The adapter section, S–IVB, and instrument unit will be jettisoned after this docking maneuver is successfully completed. Necessary mid-course corrections, using the service module propulsion system, will keep the spacecraft on the correct path to the moon. As the Apollo spacecraft nears the moon, the service module propulsion system will again be fired to slow down the spacecraft and inject it into lunar orbit. After a checkout of all systems to assure that the landing sequence requirements have been successfully met, two of the three astronauts will transfer from the command module to the lunar module, separate from the command craft, which will remain in lunar orbit, and prepare to land on the moon. The lunar module's descent engine will be fired to slow the vehicle down for a soft landing on the surface of the moon. After a stay of up to 1 day, during which the two astronauts will conduct observations, implant experiment equipment and instrumentation, and collect lunar samples, the astronauts will return to the lunar module and prepare for the critical takeoff operation. The descent stage will serve as a launching pad for the ascent stage and the cabin. The two astronauts will maneuver their craft to rendezvous and dock with the orbiting command module and reenter it. The ascent stage will be jettisoned, and left in lunar orbit to relay additional information on systems lifetime and operation back to earth. On-board guidance and navigation data, reinforced by tracking data transmitted from the worldwide network, will provide the crew with the reference points necessary to determine the return trajectory before they restart the service module propulsion system to escape from lunar orbit. After a coasting period, the service module propulsion system can be restarted for the final time to perform any mid-course corrections required to place the command module into the reentry corridor. The service module will then be jettisoned. The command module will reenter the earth's atmosphere, aiming at a narrow reentry corridor about 26 miles wide. This brief description of the manned lunar mission outlines the basic profile, and emphasizes the painstaking procedures taken to assure crew safety and mission success.

COMMAND AND SERVICE MODULE (CSM)

Command and service modules are produced at the Downey, Calif., plant of the space division of the North American Rockwell Corp. Three block I CSM's have been successfully flight tested. One of these was used for unmanned flight qualification testing to assess the reentry capability at high-speed, lunar-return velocities. The last spacecraft in this series will be launched by the second Saturn V vehicle early in 1968.

All manned missions will be flown in block II spacecraft. These spacecraft are configured for lunar missions and incorporate technological changes, including the capability for rendezvous and docking. All block II spacecraft are being modified to incorporate changes resulting from the Apollo accident. Principal modifications include the replacement of the previous two-piece command module hatch with a single unified hatch. This change will substantially reduce crew egress time under emergency conditions and simplify extravehicular procedures. Major substitutions are being made in spacecraft materials. Metallic cabin materials will, wherever possible, replace nonmetallic ones. Where nonmetallic materials remain, stringent nonflammability and nonpropagation standards have been established. Potentially flammable materials required in the spacecraft are sealed in fire-resistant coverings. Metal covers encase all exposed plumbing and electrical equipment. Additional protective measures were taken to strengthen the plumbing by placing armored collars around joints.

Fiscal year 1967 was marked by extensive ground and flight qualification testing. On August 25, 1966, a second block I spacecraft was successfully launched, orbited three-quarters of the way around the world, and recovered after withstanding high-speed reentry. Plans for additional hardware deliveries and flight testing were delayed as a result of the accident.

During fiscal year 1968 intensive qualification of block II spacecraft systems is being conducted. A boilerplate command module is being subjected to full-scale flammability tests to minimize the possibility of ignition or propagation of fire. A flight-configured command and service module will undergo thorough acoustic and vibration testing, under simulated mission environments, to verify the operational safety, reliability, and integrity of the spacecraft. Testing of the command module in the thermal vacuum test chambers at the Manned Spacecraft Center will be conducted to qualify the spacecraft before the first manned flight. The two command and service modules to be used for the first manned flights will be delivered in fiscal year 1968.

Funding during fiscal year 1969 provides for continued production and test of the command and service modules, launch support, and postflight analysis. Six command and service modules are scheduled for delivery, and integration and checkout will proceed on 11 others. A total of 19 block 11 flight command and service modules are included in the Apollo program.

LUNAR MODULE (LM)

Study and design effort on the lunar module was initiated by Grumman Aircraft Engineering Corp., Bethpage, N.Y., in early 1963. The first flight article, designated LM–1, was delivered to the Kennedy Space Center in the fall of 1967 for launch preparations leading to the Apollo 5 mission. This lunar module, launched by a Saturn IB, is scheduled for an unmanned development mission early in 1968 to verify the operational reliability of the systems. The mission will be one of the most significant undertaken to date. In addition to verifying the reliability of the equipment, the LM propulsion systems will be ignited to demonstrate its restart capabilities during flight. A LM test article, which was flown on the first Apollo Saturn V mission as part of the unmanned flight qualification test program, provided data on vibration, acoustics, and structural integrity under a launch environment. Flammability tests were conducted in December 1967 when the lunar module successfully completed a series of tests involving over 40 ignition sources and met the standards for nonpropagation of fire. In fiscal year 1968, three additional flight lunar modules are scheduled for delivery to the Kennedy Space Center.

Funding in fiscal year 1969 provides for continued manufacturing and test of lunar modules, launch preparations, postflight analysis, and associated hardware for experiments to be conducted on the lunar surface. Six flight articles will be delivered in fiscal year 1969. The five remaining articles will be in the process of assembly, systems integration, and checkout at Grumman.

SPACECRAFT SUPPORT

Spacecraft support funds provide for test operations, crew equipment, including space suits, logistics, instrumentation, and scientific equipment.

Funds for test operations are required to conduct spacecraft development tests at the Manned Spacecraft Center and other Government test laboratories.

Testing at the Manned Spacecraft Center facilities includes unmanned and manned thermal-vacuum testing in the environmental test laboratory, docking simulation tests, component and subsystem qualification, reliability and verification testing, and electronic systems compatibiltiy tests. Service module propulsion system testing and lunar module ascent and descent engine testing were emphasized at White Sands during fiscal year 1966–68. The lunar module propulsion system and reaction control system testing is conducted in special test cells at the Arnold Engineering Development Center, Tullahoma, Tenn. Spacecraft testing is being conducted during fiscal year 1968 to requalify the reentry parachute system to support the increased weight of the command module.

Spacecraft support funding also provides for development and procurement of spacesuits and related crew equipment, survival equipment, food, extravehicular activity umbilicals, personal hygiene systems, and bioinstrumentation. Major effort in fiscal year 1969 is focused on manufacturing and testing a spacesuit and portable life support system, required for operating on the lunar surface, as well as manufacturing and testing the recently designed nonflammable crew spacesuit.

Logistic funding for fiscal year 1969 is required for transportation of spacecraft between installations; reimbursement to the Department of Defense for inspection services; and procurement of spacecraft fuels and propellants used in the test programs at NASA facilities and contractor sites.

Instrumentation and scientific equipment funding for fiscal year 1969 provides for development and procurement of specialized flight research and test instrumentation. Typical equipment includes signal conditioners, sensors, transmitters, antennas, ground support equipment, cameras, and radiation measuring devices.

GUIDANCE AND NAVIGATION (G&N)

The guidance and navigation system units for the Apollo spacecraft were designed by the Massachusetts Institute of Technology. The General Motors/A. C. Electronics Division in Milwaukee, Wis., is the prime contractor for fabricating the inertial guidance, including the associated electronics and ground support, and checkout systems, and for assembling and testing all components of the system. The onboard navigational computer is manufactured by the Raytheon Company, Waltham, Mass.; the optical subsystem is built by the Kollsman Instrument Corporation, Elmhurst, N.Y.

Deliveries of the first flight G&N units for the block II command module and the lunar module were made in fiscal year 1967. In fiscal year 1968, eight block II command module and eight lunar module G&N units will be delivered. Fiscal year 1969 funds support delivery of six command module and six lunar module units, and effort on the last remaining unit which will be delivered in fiscal year 1970.

INTEGRATION, RELIABILITY, AND CHECKOUT

The integration, reliability, and checkout funding provides for automatic checkout equipment (ACE) stations and engineering support. The spacecraft ACE is used at the contractor plants and at NASA test and launch sites for separate and combined checkout of the spacecraft systems. The basic design of ACE ground stations for each of the major elements of the program was completed in fiscal year 1964; 12 ACE stations are now operational, and the requirement for additional stations is being assessed.

In fiscal year 1968–69, funding provides for operation of the checkout stations, as well as related engineering changes and spare parts to maintain the operational equipment.

Integration and reliability funding provides for the engineering support required for spacecraft specification maintenance and review; systems performance analysis; reliability and quality assurance; trend analysis of failure reports; critical parameter studies and technical problem analysis; mission planning and analysis; postflight data processing and documentation; simulation and training; and interface control. Emphasis has shifted to support of hardware verification, mission accomplishment and analysis of flight results.

SATURN IB

	1967	1968	1969
1st stage (S-IB)	$39,111,000	$33,800,000	$20,000,000
2d stage (S-IVB)	51,175,000	25,700,000	12,500,000
Instrument unit	42,214,000	28,300,000	11,000,000
Vehicle support	63,696,000	43,800,000	18,300,000
Ground support equipment	14,329,000	9,000,000	4,900,000
H-1 engine	8,535,000	5,200,000	2,000,000
J-2 engine	6,566,000	800,000	400,000
Total	225,626,000	146,600,000	69,100,000

The Saturn IB is a two-stage launch vehicle with a capability of placing approximately 20 tons of payload into a low earth orbit, and is used to demonstrate the initial operational capability of the Apollo spacecraft. The first stage, powered by eight H–1 engines, produces about 1.6 million pounds of thrust.

The Apollo program includes 12 Saturn IB vehicles. The vehicle was qualified for manned flight in 1966 after three successful development flights. A Saturn IB was scheduled to launch the first Apollo manned spacecraft in early 1967, but the Apollo accident and the subsequent requirements for significant spacecraft modifications delayed this flight until mid-1968. The current plan schedules the next Saturn IB launch, an unmanned, earth-orbital test of the lunar module, early in 1968. Another launch is scheduled in 1968 if a second unmanned test of the lunar module is necessary. Use of the remaining six Saturn IB vehicles in the Apollo program is contingent on the qualification of the Saturn V for manned flight. If the Saturn V encounters difficulties, manned flights of the command and service and lunar modules can be conducted with dual launches of the Saturn IB vehicles. In the first phase of a dual-launch mission, a manned Apollo command and service module will be orbited by a Saturn IB. Approximately 1 day later, an unmanned lunar module will be orbited by another Saturn IB to provide experience in rendezvous and docking maneuvers. Three dual launch missions can be conducted with the available Apollo Saturn IB vehicles. To the extent that these vehicles are not required for support of the Apollo program, they will be available for Apollo applications missions.

FIRST STAGE (S–IB)

The Chrysler Corporation/Space Division produces the S–IB stages at the Government-owned Michoud Assembly Facility near New Orleans, La. The stage is barged to the Marshall Space Flight Center, Huntsville, Ala., for static test. The stages are then returned to Michoud for post-static checkout and subsequent delivery to Cape Kennedy.

By the end of fiscal year 1967, four flight stages had been delivered to Cape Kennedy, and three additional stages were completed.

In fiscal year 1968, the remaining five stages for Apollo Saturn IB vehicles will be completed at Michoud and available for support of program requirements. If required for Apollo, the first of these stages will be checked out late in fiscal year 1968, modified if necessary, and prepared for shipment to Cape Kennedy.

Fiscal year 1969 funds provide for checkout and preshipment activities at Michoud, as well as delivery to Cape Kennedy and prelaunch preparations. The budget year requirements also cover stage support activities, which include engineering analysis and operation and maintenance of electrical, data measurement, and test equipment. A significant level of field support must be maintained for launch services and for proper evaluation of ground and flight data.

SECOND STAGE (S–IVB)

Basic development costs for the second stage (S–IVB) were primarily funded in the Saturn V project. The S–IVB, which is produced by the McDonnell Douglas Corp., uses a single J–2 engine developing over 200,000 pounds of thrust.

The first four flights stages for the Saturn IB have been delivered to Kennedy and three have been launched. Five additional stages were completed in fiscal year 1967. Four of these have been static tested and remain at the Sacramento test operations site for use in future missions. The other stage has completed

manufacturing and assembly at Huntington Beach, and will undergo static firing at a later date. The remaining three stages for the Apollo program were completed during the current fiscal year.

Fiscal year 1969 funding supports required stage activities, such as static testing at the Sacramento test operations site, poststatic checkout, and preshipment verification. The funds provide a significant level of field support services, which are necessary for prelaunch and checkout activities at Cape Kennedy and for the evaluation of ground and flight data on S–IVB operations.

INSTRUMENT UNIT (IU)

The instrument unit contains the primary guidance, control, measuring, and telemetry systems which govern the engine gimballing, in-flight sequencing of the engine propulsion system, staging operations, and primary timing signals. These units are being assembled and tested by the International Business Machines Corp. in Huntsville, Ala. The components and configuration are essentially the same as those used for the Saturn V. Three units were completed by the end of fiscal year 1966.

Fiscal year 1967 and 1968 effort has concentrated on the completion of the nine remaining flight units. In fiscal year 1967, five additional units were completed, one of which was delivered to Cape Kennedy and the other four were placed in storage at Huntsville, Ala. The remaining four of the total of 12 flight units will be assembled and placed in storage in fiscal year 1968.

Fiscal year 1969 funds support verification of the reliability of the completed units to meet the Apollo requirements. In addition, the funding provides for the IBM support at Cape Kennedy, necessary for prelaunch, checkout, and flight evaluation activities.

VEHICLE SUPPORT

Vehicle support includes funds for studies, services, and equipment common to more than one stage of the Saturn IB. Funding provides for engineering services; reliability tests; fabrication services; transportation; propellants; expendable supplies and equipment; launch pad refurbishment; and contract administration, audit quality assurance, and inspection services performed by the Department of Defense.

Fiscal year 1969 funding is required to provide prelaunch and launch support at Cape Kennedy for dual launches from complexes 34 and 37. Activities include component and substem testing, analysis and correction of prelaunch problems, incorporation of flight data into reliability assessments, and development of an integrated reliability report for each mission. Guidance and control systems studies will be conducted. In addition, the requirements cover refurbishment of the launch pad in preparation for the next mission. The fiscal year 1969 vehicle support funds also include transportation of the flight stages and instrument units.

GROUND SUPPORT EQUIPMENT (GSE)

The automatic ground support equipment includes electrical support equipment, which was built by the General Electric Co., and mechanical support equipment, which was produced by the Chrysler Corp. Space Division. Automatic ground checkout stations reduce the length of time and the cost of manual checkout. In addition to these checkout stations, a GSE development system or breadboard, using the RCA 110A computer, is operated at the Marshal Space Flight Center to provide the capability to validate the computer programs used at the Kennedy Space Center.

Funding in fiscal year 1967 was geared primarily to activation of electrical and mechanical support equipment installed at launch complexes 34 and 37. Fiscal year 1968 and fiscal year 1969 funds will support the operation and updating of stage and vehicle ground support equipment used to meet specific mission requirements for Saturn IB launches. This activity includes the checkout operations for the stages, instrument units, and assembled launch vehicles used for the earth orbital missions planned during these periods.

H–1 ENGINES

The H–1, a liquid oxygen/kerosene engine, was developed and is now being produced by the Rocketdyne Division of North American Rockwell Corp. Eight H–1 engines are used in a cluster to power the S–IB stage.

In fiscal year 1967, the final set of H–1 engines for use in Apollo was delivered. A total of 123 engines were delivered to meet test and flight requirements.

Funding for fiscal year 1968 and fiscal year 1969 provides for support of the flight program and for evaluation of flight data and rapid response to problems encountered in flight missions.

J–2 ENGINES

The J–2 engine, developed and produced by the Rocketdyne Division of the North American Rockwell Corp., is used in the upper stages of both the Saturn IB and Saturn V launch vehicles. A single J–2 is used in the second stage of the Saturn IB, utilizes liquid hydrogen and liquid oxygen as propellants, and delivers over 200,000 pounds of thrust.

The flight rating tests of a 200,000-pound-thrust engine were completed in July 1965. In 1966, the engine completed the qualification test program, which was a prerequisite to certifying the configuration for manned flight.

All J–2 engines required for the Apollo Saturn IB series were delivered by the end of fiscal year 1967.

In fiscal year 1968 and again in fiscal year 1969 funding is necessary to cover J–2 field support, which provides for evaluation of flight data and rapid response to any problems encountered in the flight series.

SATURN V

	1967	1968	1969
1st stage (S-IC)	$158,866,000	$156,600,000	$137,600,000
2d stage (S-II)	249,000,000	203,000,000	174,000,000
3d stage (S-IVB)	142,114,000	130,000,000	117,100,000
Instrument unit	72,008,000	77,900,000	67,600,000
Vehicle support	267,147,000	233,800,000	208,000,000
Ground support equipment	44,854,000	44,400,000	29,300,000
F–1 engine	77,434,000	83,200,000	42,700,000
J–2 engine	86,731,000	70,000,000	41,900,000
Total	1,098,154,000	998,900,000	818,200,000

The Saturn V, the most powerful member of the Saturn family of launch vehicle, is composed of three propulsion stages and an instrument unit. The vehicle is designed to boost payloads up to 140 tons into low-earth orbit and to send payloads up to 50 tons on lunar missions.

The Saturn V schedule provides for fifteen launch vehicles for unmanned qualification flights, manned lunar mission simulations, and manned lunar missions. Nine of these vehicles are scheduled to be launched before the end of the decade. Two vehicles were delivered in fiscal year 1967, the first of which was used on November 9, 1967 in the highly successful demonstration of the "all up" concept of space vehicle development. This unmanned orbital flight tested the vehicle dynamic characteristics, the reliability of the propoulsion systems, and the accuracy of the guidance and control sequencing system, as well as a spacecraft heat shield. Two additional unmanned qualification tests and the first manned flight are scheduled for 1968. For 1969, the Apollo schedule includes five manned Saturn V flights, moving toward a manned lunar landing and return by the end of the decade. Major production activity continued over the last year, with the undelivered vehicles in the process of manufacturing, checkout or test.

1ST STAGE (S–1C)

The Saturn V 1st stage (S–1C) is produced by the Boeing Co., at the Michoud Assembly Facility near New Orleans, La. The stages are now acceptance tested at the Mississippi Test Facility in Hancock County, Mississippi, before shipment to the Kennedy Space Center. The 1st stage is powered by five liquid oxygen-kerosene F–1 engines and has a total thrust of 7.5 million pounds. Stage development began in 1962. The Marshall Space Flight Center, with Boeing assistance, manufactured the first ground test stage and the first two flight stages. The first flight stage was delivered to Kennedy in 1967 and was used in the successful first Saturn V launch.

Fiscal year 1968 activity concentrates on manufacturing, checkout, and test activities. The second flight stage, which was delivered to KSC and integrated

into the AS–502 launch vehicle, is undergoing checkout in preparation for a launch early in 1968. The third flight stage arrived at Kennedy Space Center in 1967 for use in the AS–503 vehicle, and two others are scheduled for delivery by the end of the fiscal year. Two additional stages will also complete acceptance testing.

In fiscal year 1969, five stages, including the two completed in fiscal year 1968, will be delivered to the Kennedy Space Center. Two other stages will be completed at Michoud and available by the end of the year. The last three of the 15 flight stage program will be through manufacturing and in acceptance testing or post test refurbishment.

2D STAGE (S–II)

The 2d stage of the Saturn V uses a cluster of five liquid-oxygen, liquid-hydrogen J–2 engines. The stage generates a total thrust of about 1 million pounds. Development of this stage also began in 1962 and its maiden flight test was highly successful. The development, production, and test of the stage is the responsibility of the Space Division of the North American Rockwell Corp. Manufacturing, assembly, and factory checkout of the stage is performed at Seal Beach, Calif., in Government-owned facilities. Acceptance testing of the flight stages is conducted at the Mississippi Test Facility before delivery to the Kennedy Space Center.

Three of the 15 flight stages included in the S–II program have been delivered to the Kennedy Space Center. Two additional stages will arrive at Kennedy Space Center by the end of fiscal year 1968. The remaining 10 Apollo flight stages will be in fabrication, assembly, systems installation, factory checkout or acceptance testing by the end of the year.

Fiscal year 1969 funding provides for the completion and delivery of five stages, the continued manufacturing, factory checkout, and test of the remaining five stages. The funds cover extensive prelaunch checkout at the Kennedy Space Center in readiness for launch.

3D STAGE (S–IVB)

The 3d stage of the Saturn V (S–IVB), was developed and is produced by the McDonnell Douglas Corp. at Huntington Beach, Calif. The stage is powered by a single J–2 engine and generates a thrust of over 200,000 pounds. The stage is used on both the Saturn IB and the Saturn V, but basic development costs were funded from this line item. McDonnell Douglas performs stage acceptance testing at the Sacramento Test Operations Site. Fabrication of the first Saturn V flight stage began in 1964 and this stage was delivered to the Kennedy Space Center in 1967. The S–IVB achieved a significant milestone during the first Saturn V mission when it successfully demonstrated its ability to restart in a space environment. Two other Saturn V flight stages have already been delivered to the Kennedy Space Center. Another two will be transported to the Kennedy Space Center before the end of fiscal year 1968. Manufacturing, assembly, and checkout work is progressing on nine other stages at the Huntington Beach plant.

During fiscal year 1969, fabrication of the last flight stage will commence, and a total of five flight stages are scheduled for delivery to the Kennedy Space Center. Manufacturing, assembly, and checkout of the five remaining Apollo stages will be underway during this year. Fiscal year 1969 funds support this extensive activity, as well as the related prelaunch activities at the Kennedy Space Center.

INSTRUMENT UNIT (IU)

The Saturn V instrument unit is essentially the same as the one used on the Saturn IB. The instrument unit contains the guidance and control system that issues commands to the attitude control devices of each stage during powered flight to guide the Apollo Saturn V. The instrument unit also controls engine start and cutoff. The units are assembled and checked out by the International Business Machines Corp. in Huntsville, Ala. Procurement activity for the first Saturn V flight unit began in January 1965, and the first flight unit was delivered to the Kennedy Space Center in August 1966.

Effort in fiscal year 1967 was devoted to assembly and inspection of the first four flight units, as well as continued manufacturing of components. The second and third instrument units have been delivered to Kennedy Space Center to support the AS–502 and AS–503 requirements. Instrument units for AS–504 and AS–505 will be shipped to the Kennedy Space Center during fiscal year 1968.

During fiscal year 1969, five Saturn V instrument units will be shipped to Kennedy Space Center to support the schedule, fabrication, and assembly of two additional units will begin; and long-lead hardware on the last three units will be procured.

VEHICLE SUPPORT

Vehicle support funds are required to provide services and equipment that are common to more than one stage of the vehicle. Funding in fiscal year 1967 and fiscal year 1968 included instrumentation, recording, and data reduction equipment for the Saturn V dynamic test stand at Marshall Space Flight Center; shipping costs, which include use of marine vessels and aircraft for transportation of stages, engines and components; activation and operation of the Mississippi Test Facility; operation of the Slidell Facility; range safety and tracking devices for the vehicles; propellants; systems integration; and computation services, engineering services, quality control and inspection, contract administration, audit, and property administration services by other Government agencies.

In fiscal year 1969, the emphasis will be focused on necessary support test operations at the Mississippi Test Facility and vehicle support at the Kennedy Space Center. Systems integration funds are also provided to continue proper configuration control of all stages, systems, and structures, as well as reliability and flight evaluation programs.

GROUND SUPPORT EQUIPMENT (GSE)

The Saturn V ground support equipment consists of electrical and mechanical support equipment required to test and check out the stages, instrument units, and associated hardware. The checkout procedures developed for the Saturn V are based on the concept that improved vehicle reliability and minimum time at the launch site can be attained by using a computer-controlled system in which the operational soundness of components is automatically verified. Automatic checkout equipment is used at the manufacturing, static test, and launch sites.

The General Electric Co. provides design, fabrication, checkout, and logistic support of the Saturn V electrical support equipment. The Boeing Co. provides the Saturn V equipment management system, which includes a master record for all vehicle ground support equipment. Boeing is also responsible for the integration and logistic support of all mechanical support equipment. The Radio Corp. of America supplies computer systems, and provides the display systems for use at launch complex No. 39.

Activity in fiscal year 1967 included preparation and vertification of computer tapes for initial Saturn V flight missions. In addition, the vehicle GSE for the second set of facilities at launch complex No. 39 was installed and checked out. Delivery and installation of vehicle-associated GSE for the third launch umbilical tower, high-bay, and firing room was also initiated.

Fiscal year 1968 funds support preparation and verification of computer tapes for the manned Saturn V missions and also provide for completion of Saturn V-related GSE for the third launch umbilical tower, high-bay, and firing room at launch complex No. 39.

Fiscal year 1969 funding supports the operation of stage and vehicle ground support equipment, including mechanical and electrical support equipment to satisfy Saturn V requirements. This activity includes checkout and operations for the stages, instrument units, and assembled launch vehicles.

F–1 ENGINES

The F–1 engine was developed and is produced by the North American Rockwell/Rocketdyne Division at Canoga Park, Calif. Engine testing is conducted at Edwards Air Force Base, Calif. Five liquid oxygen/kerosene F–1 engines are clustered in the first stage of the Saturn V, with each engine generating approximately 1.5 million pounds of thrust.

The initial contract for the F–1 was awarded to Rocketdyne in January 1959.

By the end of fiscal year 1967, a total of 63 F–1 engines had been delivered to support the Saturn V. This total included spares, test, and flight engines.

Activity in fiscal year 1968 emphasizes the delivery of flight engines to meet the Apollo Saturn V schedule. By the end of the current fiscal year, 19 additional F–1 engines will have been delivered for the ground test and flight program.

Funds in fiscal year 1969 provide for continued engine deliveries to meet flight requirements. Twelve F–1 engines are scheduled for delivery during this period. The funds also provide a quick-response capability for evaluating and resolving any F–1 problems encountered in the flight missions. This effort covers field and engineering support; maintenance of the test engines; testing of the components and engine systems, including propellants; and periodic verification of flight worthiness to assure mission reliability, and safety.

J–2 ENGINES

The J–2 engines are also produced by North American Rockwell's Rocketdyne Division. These engines are used in the two upper stages of the Saturn V. The second stage is powered by five J–2 engines, each producing over 200,000 pounds of thrust, while the third stage is powered by a single J–2 engine with restart capability. The J–2 entered development in September 1960, and the first flight demonstration was achieved in February 1966.

During fiscal year 1967, the engine delivery rate intensified to meet the schedule requirements. By the end of that fiscal year, a total of 98 J–2 engines, including ground test and flight articles, had been delivered. During fiscal year 1968, an additional 18 engines are scheduled for delivery.

The funds in fiscal year 1969 provide for delivery of 12 more engines and for the field and engineering support activity required for flight evaluation and problem solving. The funds also assure maintenance of test engines in a configuration for rapid solution of problems; component and system testing, including propellants, as well as periodic verification of flight worthiness.

ENGINE DEVELOPMENT

	1967	1968	1969
Engine development (total)	$49,800,000	$18,700,000	

Fiscal year 1968 is the last year of funding under the engine development project. Qualification of the H–1, F–1, and J–2 engines was accomplished during fiscal year 1967. Funding during fiscal year 1968 provides for Government-furnished propellants for continued test activity and for Government in-house and independent contractor analysis of engine hardware. A major activity is the J–2 engine environmental test program conducted at the Air Force Arnold Engineering Development Center, Tullahoma, Tenn. No funding is requested for the engine development project in fiscal year 1969.

MISSION SUPPORT

	1967	1968	1969
Operations	$184,120,000	$227,800,000	$262,100,000
Systems engineering	27,300,000	37,000,000	37,300,000
Supporting development	27,000,000	32,000,000	32,000,000
Total	238,420,000	296,800,000	331,400,000

Mission support funds provide for the critical areas of launch, flight crew, and recovery operations and for the programwide engineering and technical integrated support and supporting development necessary for the accomplishment of manned space flight.

OPERATIONS

There are two centers of operations activity; one at the Kennedy Space Center, Fla.; where the launchings take place, and the other at the Manned Spacecraft Center, Tex., where crew training, and flight and recovery operations are conducted and directed.

Funding for the Kennedy Space Center covers the operation of checkout, launch and instrumentation facilities including those contractor services and equipment and materials supplied by the Air Force Eastern Test Range for which the National Aeronautics and Space Administration reimburses the Department of Defense. Launch operations funding has been increased by $19.8 million to cover the new reimbursable arrangements at the Air Force Eastern Test Range including operational support to launches, and general support from technical shops and instrumentation sites. In addition to the operation and maintenance of launch complexes 34 and 37, the Department of Defense provides continuous wave-tracking services and technical shop and laboratory support. The major operational costs and elements at the Kennedy Space Center, however, are associated with operation and maintenance of launch complex 39; specialized maintenance and repair of launch facilities; maintenance of communications instrumentation, including the Center computer complex; and the modification and updating of all launch associated equipment and facilities.

Funding for effort conducted and directed by the Manned Spacecraft Center includes the operation and maintenance of the very complex mission control center, the training of astronaut crews through the use of mission simulators and high performance aircraft. Manned Spacecraft Center operations activities also include the direction and funding of recovery operations, and important mission planning requirements including trajectory analysis, failure analysis and evaluation of the performance and operational characteristics of the manned space flight network.

Mission operations funding requirements increase significantly as the Apollo program momentum is reestablished and the launch, flight, and recovery activity increases. Fiscal year 1969 requirements are related to the manned space flights scheduled during the fiscal year and to the preparation of crews and space vehicles for the subsequent missions.

This pace of the activity leads to a manned lunar landing and return before the end of the decade.

SYSTEMS ENGINEERING

Systems engineering provides for integrated technical support, review, and analysis of manned space flight programs. These services include the development of functional and performance standards for the program, consistent with mission objectives; mission planning; technical integration and evaluation test objectives and integration; program and systems specifications; trajectory analysis; check out effectiveness; and technical documentation. Bellcomm, Boeing, and General Electric are the principal systems engineering contractors.

During fiscal year 1967 and fiscal year 1968, emphasis was placed on developing and maintaining a quick response capability for validation and analysis of flight data on a time scale compatible with the turnaround time of Apollo flight missions. Funding also provides for nonrecurring maintenance and rehabilitation of Government-owned industrial plants.

The systems engineering requisite for technical integration and evaluation, trajectory analysis, checkout effectiveness, analysis of flight mission results, detailed studies of specific lunar landing areas and constraints, and technical documentation will continue through fiscal year 1969 to support the flight activity.

SUPPORTING DEVELOPMENT

Supporting development consists of individually selected engineering efforts which back up an ongoing mainstream program with alternate or improved hardware or which provide a firm basis for specific hardware decisions which must be made in the relatively near term future. The nature of these engineering efforts varies widely, extending from substitute space systems, materials to fabrication and test, and evaluation techniques. It is an essential characteristic of these tasks that they are undertaken with a specific hardware situation for a specific application in mind. When completed and the results applied to ongoing manned space flight activities, there have been notable achievements in cost reduction and/or increase in performance, reliability, safety, confidence, or simplicity. One hundred and fifty tasks are currently underway in fiscal year 1968, with individual funding requirements ranging from $10,000 to $300,000. The tasks range from development of an astronaut microphone with superior noise-canceling characteristics and increased dynamic range to the development of a system at the Kennedy Space Center that will automatically and con-

tinuously monitor the purity of fluids being supplied to space vehicles while they are on the launch pads undergoing checkout or actually in the countdown for launch. The astronaut microphone will be used for the second manned Apollo mission.

Other results of previous tasks that have been incorporated into manned space flight systems include high and low temperature resistant explosive devices for use on the CSM & LM; improved hand-held maneuvering unit for extra-vehicular activity; an exploding bridgewire firing unit for rocket engines; a pressure transducer that can withstand the 6,000° F. temperature of rocket engine combustion, and a new type surfacing for the crawlerway at LC 39.

Effort in fiscal year 1969 will concentrate on continuing those promising tasks started in fiscal year 1968 and in undertaking new tasks designed to increase the reliability and usefulness of the present Apollo/Saturn systems and facilities.

Apollo Applications Program

Mr. Evins. Dr. Mueller, what is the time schedule for the Apollo applications program?

Dr. Mueller. With respect to Apollo applications, the urgency that I sense in moving forward with Apollo applications is the fact that we have a reasonable probability of being able to carry out the manned lunar landing in this decade. The Apollo applications program is designed to use much of the actual hardware built in the Apollo program for earth orbital operations and a small part of it for continued lunar explorations.

Basically, the Apollo applications program then needs to move forward if we are going to continue manned space flight in an orderly fashion.

Mr. Evins. Apollo applications is basically a follow-on of the Apollo program.

Dr. Mueller. We will be using this marvelous capability that has been developed to operate in earth orbit and to learn how to carry forward the techniques for experimenting in a space environment.

There are some 84 experiments that are being carried on. The orbital workshop and the Apollo telescope mount are the key elements of this first set of flights in Apollo applications program. These 84 experiments contain some five or six that are being done for the Department of Defense. None of those experiments are included in the manned orbiting laboratory program of the Department of Defense, so here is a clear indication that we are moving forward in an area that is of great significance to the future of manned space flight in this country.

Cancellation of AAP IA Flight

Mr. Webb. Now, Mr. Chairman, I would like to add one word in view of Mr. Jonas' question about having the Department of Defense veto certain experiments. We had, in the Apollo applications program presented last year, an early flight with certain earth-sensing equipment. We called it the AAP–IA flight.

When the funds were reduced last year and we had to revise the program and present it to you as you see it this year, and when the President imposed on us the requirement to hold down our expenditures in 1968 and 1969 and we ourselves then reprogramed $65 million out of the Apollo applications program, we canceled the IA flight. It may be that that cancellation for those reasons is one of those

referred to in this article you read me this morning, but it would not have been in any way related to a Department of Defense effort to veto something that NASA wanted to do.

Mr. EVINS. The Apollo applications program flight missions planning is separated into two categories: earth orbital missions using both the Saturn IB and the Saturn V, and lunar missions using Saturn V vehicles.

You indicate that the initial orbital workshops are planned in 1970. Will you tell us about these plans, please?

AAP WORKSHOPS

Dr. MUELLER. The workshop, of course, is the first step in learning how man can work most effectively in space.

Mr. EVINS. It is planned to take one of the big Saturn V vehicles and convert it into a workshop?

SATURN I WORKSHOP

Dr. MUELLER. That is the second workshop. We have really in this plan two workshops. The first one is a Saturn I workshop which uses the spent stage of the Saturn IB, together with a command and service module flight on a second Saturn IB to provide a workshop in earth orbit. This permits us, at very low cost, to determine some of the elementary things about how man can work in space. We need to learn how a man can walk on the floor. As you know, this is a single floor, two-story dwelling with one side of it outfitted for the living quarters of the astronauts. The other side of the floor is set up for carrying out experiments, the experiments in developing technological capability. For instance, we will be carrying out some welding up there. We have a set of biomedical experiments in which we are going to measure the response of men to circular motion in space——

Mr. EVINS. You will launch one vehicle and then in a few days you will launch another to rendezvous and connect with it and operate together. Is this the plan?

Dr. MUELLER. That is correct.

Following this first workshop and its revisit, we then have designed an Apollo telescope mount which provides for a solar astronomical mission. This astronomical mission is creating one of the most advanced solar sets of equipment—sets of equipment for solar observations—that we have ever had anywhere in the world.

LENGTH OF WORKSHOP OPERATION

Mr. EVINS. How long do you envision this workshop No. 1 will operate?

Dr. MUELLER. We expect to use it over a period of a year to 18 months.

Mr. EVINS. You state here in your justification that you plan the crew will be there for 28 days.

Dr. MUELLER. The first workshop mission will be for 28 days.

Then we plan to leave the workshop in orbit, return the crew to earth, fly back again with the crew and, if all is working well, to have the second crew go up and stay for 56 days.

Mr. EVINS. You are going to have a revisit mission?

Dr. MUELLER. That is correct.

Mr. EVINS. How often do you expect to revisit?

Dr. MUELLER. We plan to have one revisit in 1970 and two or three revisits in 1971.

Mr. EVINS. I understand that you plan to send along a medical doctor.

Dr. MUELLER. That is correct. We will have the capability in workshop flights of having one of our scientists go along on each one of the missions. In the first workshop it will be a medical doctor. When we send up the observatory, the solar observatory, we will be sending up scientists trained in solar observations and astronomical observations.

Mr. EVINS. I thought the doctor was going to go on the revisit mission.

Dr. MUELLER. We hope to supply one for both the first revisit mission, as well as the first mission itself, in establishing the workshop.

PRINCIPAL OBJECTIVE

Mr. EVINS. Why did you decide to have a doctor go along?

Dr. MUELLER. The principal thing we are trying to learn is whether or not there is some problem, or physiological response to the zero gravity environment, to the environment inside the workshop itself.

As you know, we really have never had a spacecraft in which man could move freely around; where there was enough area and enough volume so that a man could walk freely.

Mr. TALCOTT. When you get that big a crowd in the space capsule, you are likely to have somebody getting sick or disabled in some way, perhaps appendicitis or an heart attack. What do you plan to do with him when that occurs?

Dr. MUELLER. It depends on the nature of the illness. We will have medical doctors along in these workshop flights so they can take care of and treat simple illnesses. If you have an attack of appendicitis, we probably would return to earth and abort the mission.

Mr. WEBB. If you have three men working in the workshop and one becomes sick, you would undoubtedly bring back the one who was sick. Whether you brought the whole crew back would have to be decided at that time. This involves an ability to go back and forth. Mr. Talcott, this is very important in connection with the Saturn IB capability we have mentioned. If we can shift from the small Saturn to the large one rapidly, we will have some of the small Saturns left over that will be quite useful in this kind of an operation.

NASA–DOD DISCUSSIONS ON WORKSHOP

Now, if it should turn out in the discussions that we have informed the Committee we are going to have with the Department of Defense—certain preliminary discussions have already been held—if it should turn out that the Department of Defense also needs a Saturn V launch workshop for their own purposes to do their own job as military forces, then together we may develop a more efficient and larger vehicle than the Saturn IB, one that might carry 100,000 pounds. In that case,

with the Saturn V workshop, you might maintain it there continually for a long period of time. If the orbit begins to decay, they simply take the engine in the service module and give it a little kick up to maintain it there.

Now, I do not wish to leave you with the impression that this is a settled program that we are presenting. What we are in fact presenting in an oversimplified form, is the fact that we believe we will have at least one Saturn V, No. 515, available to launch such a payload and that we can prepare one by about 1973; that we will be spending about $5 million this current fiscal year to do the preliminary studies, and we are asking you to appropriate $50 million for 1969. This is a relatively slow rate of progress toward such a payload, but it gives this Committee and Congress a full chance to look, examine, and see steady progress to be made toward a launch to be made about 1973. In the meantime, the very studies themselves will be of a vast amount of utility to us while we are flying out the Saturn V flights, going from 2,000 hours of experience with astronauts away from the earth, to 6,000 hours. So we have these two processes; a slow, steady buildup toward a workshop while at the same time you are gaining many, many hours of flight in the Apollo system.

Mr. Evins. The Saturn I workshop is supposed to stay up about 28 days and the Saturn V workshop is supposed to stay up a year.

EFFECT OF BUDGET CUT ON FLIGHT DURATION

Dr. Mueller. Yes; but it is very important again, Mr. Chairman, to recognize that while we project these as estimates, and on the basis of the requested funding, there has already been an action in the authorizing committee, to reduce it by something like $44 million. It may well be that we find that the kind of Saturn I interim workshop—it really is an interim thing to prove out certain things we have never had the slightest bit of experience with—may well be that, as an interim program, we will not be able to sustain this 1-year duration.

SOLAR ASTRONOMY MISSION

Mr. Evins. You have another one here, the solar astronomy mission for 56 days. What are the objectives of this mission?

Dr. Mueller. The solar astronomy mission is a different mission. It uses the same workshop and is a rendezvous with that first workshop.

Mr. Evins. It is a similar workshop, but a different mission?

Dr. Mueller. Well it is a module that attaches to the workshop and it is a different mission. It, in fact, carries the telescope into orbit that is used for observing the sun.

Mr. Evins. This mission is planned for 1971. It uses the orbital workshop as a base of operations for a manned solar observatory and the module is configured for a 56-day mission. You have your Saturn I workshop and your Saturn V workshop, and then your solar astronomy mission is a third one under your Apollo applications program. Is this correct?

Dr. Mueller. That is correct.

ASSEMBLY OF VEHICLES IN SPACE

Mr. WEBB. Could I take one moment there, Mr. Chairman? What we want to do is send this Saturn I workshop up as a part of the rocket. We will have to burn the hydrogen in it to get it into orbit at all. It has an airlock attached to it. So you send the second rocket up with a command and service module; you dock the two; and the men enter this tank and begin to go to work and determine how they can move around and how they can walk.

Then later you launch a third rocket with the telescope mount on it and it comes up and docks with this configuration. So in a sense you are going to bring three vehicles together in space over a period of time.

Mr. EVINS. This is the locking of the third vehicle?

Mr. WEBB. Yes, sir.

Mr. EVINS. I am just trying to get on the record a picture of these different missions.

Tell us something about the lunar mission.

AAP LUNAR MISSIONS

Dr. MUELLER. The lunar missions use the same equipment that was developed for the Apollo lunar landings, and continue to explore different parts of the moon. It isn't enough to bring back samples from a single point on the moon. We need to bring back samples from several points on the moon before we can begin to understand the geologic formation of the moon itself.

At the same time, we expect to carry up additional permanent packages that will be left on the lunar surface, and, by having several points instrumented across the moon, we will learn a great deal about the seismic activity of the moon and what sort of a body it really is.

Mr. EVINS. By the time you have perfected these workshops, you feel that you will be capable of staying extended periods of time in space?

Dr. MUELLER. Yes, sir.

Now, in the lunar exploration phase, though, because of our real need to conserve funds, we will be using the same equipment we developed for the early Apollo applications missions. Now we are trying to develop a longer stay time on the lunar surface and to develop the capability of moving about on the lunar surface away from the lunar module.

We are looking at two ways of doing this. One is in terms of extending the stay time; we are going to increase the expendables on board the spacecraft, and to fly a more efficient orbit down to the lunar surface.

We also plan to use the propellants, that are necessarily left over after you land on the lunar surface, to provide power for a small flying vehicle which can then fly from point to point on the lunar surface. Now, you have all seen the Pogo vehicle developed by Bell Aerosystems for the Army. We are looking at that for a lunar surface application. These are the two major areas we will begin with. Eventually, but not funded this year or next year, we will be developing the

capability—although studies are going on in this area—of rendezvousing on the lunar surface with an unmanned vehicle and a manned vehicle to extend the stay time on the lunar surface up to 2 weeks. That is a lunar exploration program in a nutshell.

Mr. EVINS. You pointed out three important extensions; extension of stay time for the astronauts; increase in the exploration radius, and an increase in the landed payload for mission support.

Mr. WEBB. Yes, sir. Mr. Chairman, it is quite important to recognize that we are firmly scheduling the Apollo mission and this budget will firmly fund the nine Saturn V flights by the end of 1969 if we have no trouble. We will be buying four instrument packages. If we fail on the first effort to land on the moon, we will have three more instrument packages. So the real problem here in this extended lunar exploration program is to do enough work now so that we could compare second and third flights to the moon with the value of these earth orbital operations that Mr. Wyman was inquiring about. In essence, we are not asking you to approve those as firm missions; we are asking for funds to continue the studies so we can make a wise decision after the first landing on the moon, and be thoroughly prepared for this, but not, at this stage of the game, be committed to it.

SATURN FLIGHT SCHEDULE

Mr. EVINS. Let's go back to your Apollo program for a minute. You have 15 Saturn V vehicles. You expect to launch nine before 1970 and you expect to fly about five of the nine this year in one type of mission or another?

Mr. WEBB. In this fiscal year that we are discussing, yes; and nine total by the end of calendar year 1969.

Mr. EVINS. How many will be unmanned?

Mr. WEBB. Sir, I would like to say two or three unmanned. It may well take three flights of this big bird before we can have the courage to put men on it. I would rather say two or three, rather than one or two.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. EVINS On the record, Mr. March.

TOTAL COST OF ONE SATURN/APOLLO

Mr. MARSH. What does a Saturn V rocket cost by itself? What cost do you assess to the rocket and what do you assess to the capsule? Every time you see one of these shots going up, you can say, "There goes x millions of dollars."

Dr. MUELLER. It depends; $186 million, I believe, is the cost of a Saturn V at the rate we are talking about here in the Apollo program, and about $55 million for the command and service module and another $41 million for the lunar module.

Mr. EVINS. What is the total of the three? That is the big bird, complete?

Dr. MUELLER. It is roughly $280 million.

Mr. WEBB. May I say just one word here? A vast amount of work by up to as many as 300,000 people have been involved to do the

developmental work to get you up to that point. So it would not cost that much to produce an exactly similar vehicle. You have these extensive development costs involved, and you have this large complex at Cape Kennedy which costs $500 million. It is not right to say that each big bird itself costs that much; it is the training of the men to do this kind of work which really costs this much.

Mr. LILLY. In the follow-on production of the Saturn V, if you are producing at the rate of about six a year, each Saturn V costs about $132 million. At the rate of two a year it costs about $239 million. The rates go tremendously higher at the lower rate.

Mr. EVINS. How much of the $439.6 million for the Apollo applications program will be expended in 1969?

Dr. MUELLER. In fiscal year 1969?

Mr. LILLY. In fiscal year 1969 the portion of the $439.6 million itself to be expended will be about $294 million. Our experience on this is that in the research and development appropriation, expenditures or checks issued in the first year are about 67 percent. In addition, as you are well aware, there are more costs incurred than this, but the bills will not all have been paid in the first year.

SATURN PRODUCTION RATES

Mr. EVINS. To minimize expenditures, delivery of Saturn IV launch vehicles for use in the Apollo applications program has been rescheduled to two per year. Production of Saturn V launch vehicles for Apollo applications is also scheduled at two per year with the first delivery of a post-Apollo vehicle planned for 1971.

Mr. WEBB. What we are saying there, Mr. Chairman, is in 1961, when we felt this strong compulsion not to be second best in space, we presented to you a plan, which has been approved each year, to build up a capability to launch six Saturn V's a year and six Saturn 1–B's per year.

Last year we hoped to have approval for a production rate of four per year which would have been two-thirds of our capability. We are saying to you that under these reduced funds we are down to two per year, or only one-third of the capability that we have developed. But it is very important not to stop those production lines on those boosters.

As you can see, it accounts for $100 million of the $439 million, roughly.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages RD 2–1 through RD 2–12.

(The pages follow:)

OFFICE OF MANNED SPACE FLIGHT, APOLLO APPLICATIONS PROGRAM

Program objectives and justification

The Apollo applications program is directed toward increasing the effectiveness of manned space flight operations in the accomplishment of experiments and other inflight activities. The program presented herein uses the capabilities developed for the Apollo program and is designed to accomplish a limited but carefully selected spectrum of scientific, technological, and medical investiga-

tions. The program is configured to maintain progress in manned space flight and provide the information required to permit knowledgeable decisions concerning potential follow-on space programs while operating within a severely limited budget.

Missions are built upon a strong base of flight experience, ground facilities, and trained manpower developed in the Gemini and Apollo programs. Maximum economy is achieved through the use, modification, and expansion of present Apollo systems capabilities rather than moving toward wholly new developments. Further, any Apollo spacecraft and launch vehicles not required to meet Apollo objectives will be used for Apollo applications missions.

The Apollo applications mission objectives include:

1. Obtaining information on how best to sustain or improve the effectiveness of man in space in terms of biomedical considerations, living conditions, mobility, and work station designs.

2. The achievement of long duration operations. Since the quantity of data return and other accomplishments is generally directly proportional to the duration of the flight, the value and economy of each mission can be greatly enhanced by increasing the amount of time that can be devoted to productive activities.

3. The conduct of scientific, technical, and applications tasks with the aims of assessing, experimenting with, and increasing man's capabilities for performing these tasks; as well as the acquisition of useful data and results.

Because these activities are still exploratory in nature, and in many respects will establish the base for more extensive follow-on systems, the information will be obtained as early as possible within fiscal constraints by using to a large extent already developed Apollo hardware, and by employing revisit and reuse techniques in the flight missions.

During fiscal years 1968 and 1969 Apollo applications funding provides for continuation of production of Saturn launch vehicles at a minimum rate and development and fabrication of the equipment and experiments for the orbital workshop, the solar astronomy, and the revisit missions. In addition, definition effort will be underway to determine the equipment and experiments necessary for the most effective exploration of the moon in the post-Apollo period. These activities support the following missions in the Apollo applications program:

Saturn I Workshop Mission.—Initial orbital workshop operations are planned in 1970. The orbital workshop is set up inside the empty hydrogen tank of a spent S–IVB stage, that is, after its actual use as a launch vehicle stage, the workshop then serves as the nucleus of an embryonic space station. Operating subsystems for power, life support, thermal controls and experiments, together with airlock; docking adapter and experiments modules, are carried in the volume occupied by the spacecraft adapter in the normal Apollo configuration.

The Saturn I workshop mission requires the launch of two Saturn IB vehicles to establish and begin operation of a large volume workshop in earth orbit. An unmanned flight, consisting of a Saturn IB with an airlock module, and a docking adapter, will be launched first. A second Saturn IB launch occurring approximately 1 day later, will be manned and will rendezvous with the S–IVB stage of the first flight. The hydrogen tank of the S–IVB stage will have been modified so that it is safe for crew occupancy and will be used for living and working quarters. Following venting, the hydrogen tank will be repressurized with the two-gas atmosphere of oxygen and nitrogen. The crew will transfer from the command module through the docking adapter and the airlock module into the orbital workshop, and complete preparations for the crew quarters. Elements of the space station will have already been preinstalled in the S–IVB stage before launch. The airlock module will have a suitable hatch to permit access to space without depressurizing the orbital assembly.

The experiments planned on this mission are chiefly devoted to determining and evaluating task performance of men in space over extended periods of time. Habitability experiments include crew quarters evaluation, food and food preparation, personal hygiene provisions, evaluation of space suits, and mobility devices. Extensive medical evaluations of the effect of long duration space flight on the crew will be made. Engineering experiments, including maintenance tasks, measurement of heat flow, electron beam welding, tube joining, and flammability in the zero gravity environment, will be conducted. Finally, various technology and scientific experiments, including earth science observations are

planned. The planned mission duration for the crew will be 28 days. After completion of experimental activities, the equipments in the workshop, airlock, and docking adapter will be placed in a standby mode for the orbital storage. The crew will return to the command module and separate from the docking adapter. The service module propulsion system will be used to place the command module on an earth return trajectory.

Workshop revisit mission.—The first workshop revisit mission uses a single Saturn IB launch of a three-man command and service module to rendezvous and dock with the orbital workshop stored in orbit at the completion of the previous mission. The mission is the first flight test of the concept of reusing a habitable space structure after a period of several months of untended operation in orbit. Its planned duration of 28 to 56 days is the next step in the progressive extension of mission length to systematically test and evaluate the ability of both man and equipment to function effectively for long periods of time in space. For this reason, the primary in-flight experiment emphasis will be in the medical area. This will be the first mission in which a medical doctor is a member of the crew. Other crew activities will continue the experimental evaluation of the utility of the various habitability subsystems and accommodations of the workshop itself, and of the extravehicular activity devices carried in the initial workshop launch. The results of the initial workshop mission will be used to refine the operating procedures. Similarly, the results of this mission will be used to improve equipment and operating plans for subsequent missions.

Solar astronomy mission.—The third mission, planned for 1971, uses the orbital workshop as a base of operations for a manned solar observatory. One Saturn IB will launch a three-man command and service module configured for a 56-day mission; a second Saturn IB launches the unmanned Apollo telescope mount (ATM) with its payload of solar instruments. After the command and service module and ATM rendezvous and dock with the workshop, the crew reactivates the workshop and begins the operational phase of the mission. This mission will be the first flight test of equipment and operating concepts for future manned and man-tended astronomical observatories. The ATM incorporates high resolution solar telescopes and spectrographs for observing dynamic phenomena on the surface and in the corona of the sun. The mission is scheduled to fly at a time when there is good expectation of sunspot activity. It is expected that an astronomer astronaut will be a member of the crew. Crew activities are structured to allow the maximum possible time for operation of the observatory. Medical observations of the crew during this second 28- to 56-day mission will add significantly to the data base on man's reaction to the space environment. Just prior to their return from the mission, the crew puts the work shop and the ATM into condition for orbital storage for further use on subsequent revisits. The ATM hardware and mission plans are designed to operate independently if the orbital workshop is not available for reuse.

Workshop-observatory revisit missions.—A series of three additional revisits to the orbital workshop is planned in 1971. These will use the same configuration of the command and service module being developed to support the first revisit to the workshop and the Apollo telescope mount missions, with a nominal duration of 56 days.

Goals for these missions include continued use of the ATM for solar observations, the ferrying of additional experiments to the workshop, further evaluation of evolving concepts in the area of crew systems and habitability of the workshop, and continuation of experiments using instruments and equipments orbited on previous missions. A further goal is to achieve continuous operation of the orbital workshop by having later missions overlap the earlier ones. This will allow limited periods of operation with two crews in the workshop simultaneously and in turn provide the option to make the next progressive step in crew stay time to a duration of the order of 100 days.

Saturn V workshop.—Over the past several years NASA, with supporting effort from many contractors, has conducted a series of studies of the configuration and utilization of an orbital workshop launched on a Saturn V. The ability of the Saturn V to orbit a workshop outfitted on the ground before launch significantly enhances the effective use of manned operations in earth orbit. The flexibility in locating diverse mission experiment equipments, the ability to maintain continuous operation and to add new experiment payloads on resupply flights, and the possible increase in crew size are factors of great potential value.

The development and operation of the Saturn I workshop will provide the engineering, biomedical, behavioral, and operational knowledge which will permit

moving forward into this next step. In a similar manner, the diverse experimental activities to be undertaken in the first set of Saturn I workshop missions will provide background to the operational employment of the more comprehensive research program which can be carried out in a Saturn V workshop.

Effective evolution and utilization of the space program and its capabilities require that the specific approach to the Saturn V workshop be determined within the next year. This definition effort will be directed toward the workshop: its scientific, engineering, and medical payloads; and operations plans.

The specific Saturn I workshop mission plans, definition of potential follow-on experiments and studies of configurations and systems all point to the logic of progressing to the Saturn V launched workshop as the next follow-on step in an evolutionary manned orbital program. The effective utilization and progression of the space program and its capabilities require that the specific approach to a Saturn V workshop be determined within the next calendar year. This definition effort will be directed by the workshop; its scientific engineering and medical payloads; operations plans, resupply and supporting systems; and overall program plans.

This Saturn V workshop is a natural progression from the Saturn I workshop, as well as from the Mercury, Gemini, and Apollo programs. It will enable astronaut crews to conduct major scientific and engineering investigations for a period of a year or more.

Lunar missions.—Following the first Apollo landings, we will continue exploration of the moon. During the continuing phase of lunar exploration one to two missions per year are envisioned.

Whereas the first Apollo missions will be restricted to a narrow zone over the lunar equator, the later missions are planned such that they can have access to over 50 percent of the visible face of the moon. In addition to increasing the accessible area, the extended lunar module will be capable of landing within one kilometer of a predesignated target. Study of candidate sites for post-Apollo missions continued at an increased pace during the past year abetted by the photographs received from the Lunar Orbiters. These photos were studied by several teams of scientists with the result that the 10 most highly desirable sites have been identified. These sites, scattered within the acceptable landing area, are under continuing study in order to better understand their impact on future mission planning.

In analyzing the requirements for the post-Apollo missions three important extensions to the projected Apollo surface mission capability were identified:

1. Extension of staytime for the astronauts.
2. Increase in exploration radius about the landing site.
3. Increase in landed payload for mission support.

Studies of ways to extend the missions in these areas were conducted during the past year and preliminary designs for the required modifications to the Apollo lunar module were underway. With these proposed modifications, missions in 1971 and 1972 can be planned with a surface staytime for two astronauts of 3 or more days during which time they will be able to explore within a 5- to 10-kilometer radius of the landing point. This increased capability is brought about by utilizing performance margins which have been identified in the apollo lunar module and which we are confident will become available.

The increased capability of the lunar module increases the scientific effectiveness of the lunar mission in two important ways. It allows much greater selectivity in the choice of scientifically interesting sites and second, it allows the carrying of a mobility device to increase the potentially accessible area on an individual mission.

The objectives of the 3-day lunar mission are to develop our ability to conduct investigations at high priority scientific sites and to provide information in support of future operational requirements. The scientific payloads will be used to collect detailed data at the landing site and will include deployment of packages similar to the Apollo Lunar Surface Experiment Package (ALSEP). These experiments will be directed primarily toward the establishment of instrument networks on the lunar surface. Scientific investigations will center about the collection of data at specific features selected from orbital photography. Sampling, and the return of samples to earth, will continue to be of the highest priority.

The increase in landed payload and staytime will significantly increase the scientific return of the missions improving the opportunity for effective analysis and sampling over a greatly expanded area on the lunar surface.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Space vehicles	$37,700,000	$86,000,000	$201,300,000
Experiments	37,600,000	139,000,000	190,300,000
Mission support	4,700,000	28,200,000	48,000,000
Total	80,000,000	253,200,000	439,600,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATIONS

	1967	1968	1969
John F. Kennedy Space Center, NASA	$400,000	$2,000,000	$4,200,000
Manned Spacecraft Center	31,291,000	120,300,000	197,900,000
Marshall Space Flight Center	41,781,000	119,200,000	223,900,000
Goddard Space Flight Center		3,000,000	3,000,000
Jet Propulsion Laboratory		800,000	1,100,000
Ames Research Center	365,000		
Electronics Research Center		400,000	1,000,000
Langley Research Center	1,345,000	1,000,000	1,000,000
NASA headquarters	4,818,000	6,500,000	7,500,000

BASIS OF FUND REQUIREMENTS

SPACE VEHICLE

	1967	1968	1969
Saturn I–B procurement	$21,900,000	$28,600,000	$35,400,000
Saturn V procurement	1,300,000	2,400,000	61,300,000
Spacecraft modification	14,500,000	55,000,000	104,600,000
Total	37,700,000	86,000,000	201,300,000

Funding of space vehicle requirements in support of the Apollo applications program through fiscal year 1969 is limited to the procurement of Saturn IB and Saturn V launch vehicles and to the design, development production and installation of Apollo spacecraft systems that require modifications to meet the long duration objectives established for Apollo applications missions.

To minimize expenditures, delivery of Saturn IB launch vehicles for use in the Apollo applications program has been rescheduled to two per year beginning in calendar year 1970. Funding of the production activities to support the delivery requirements began in the fiscal year 1966 when funds were used to procure long leadtime components for the H–1 engines used in the first stage of the Saturn IB. Component fabrication was started in fiscal year 1967, and by the end of fiscal year 1968, vehicles 213 and 214 will be in manufacturing.

Funding in fiscal year 1969 provides for the continuation of production of vehicles 213 and 214 and long leadtime procurement on subsequent vehicles. We will have to place orders late in 1968 in order to continue production beyond IB No. 216.

Production of Saturn V launch vehicles for Apollo applications is also scheduled at two per year with the first delivery of a post-Apollo vehicle planned for 1971. Funding in fiscal year 1967 and fiscal year 1968 is related to long lead procurement for engines. The very low rate of funding in these years is directly related to the stretch out of Apollo production which has deferred any substantial funding of follow-on Saturn V's until fiscal year 1969. Although there is a sharp increase in AAP funding for Saturn V procurement in fiscal year 1969, this is offset by a reduction in Apollo Saturn V funding and the total shows a steady downward trend.

Fiscal year 1969 funds provide for initial production efforts on all three stages of launch vehicle 516 and on the S–II stage of vehicle 517.

The long-duration characteristics of the Apollo applications missions require that spacecraft systems be modified to support these extensions in flight time. The Apollo spacecraft has been designed and produced to provide a 14-day opera-

tional capability and must be modified to accommodate the 56-day mission that is incorporated in the Apollo applications program. The capability of the lunar module will be extended to permit a 3-day stay time on the lunar surface.

Major modifications to the command and service module include increasing the capacity of the reaction control system to support flight maneuvering during long duration missions. The lifetime and reliability of the fuel cells will be improved to assure performance for 56 days. Cryogenic tankage will be increased to provide the additional hydrogen and oxygen for powering the fuel cells and life support during extended duration flights. The communications and electrical systems will also be modified to accommodate an increase in voice and data recording units and to provide power regulation, current transfer, and interface controls between the command module and the space vehicle coupled to it. Display and control systems for the crew must be changed to reflect the increased capacity and performance of the spacecraft. The command and service modules used for Apollo applications missions will provide an oxygen-nitrogen atmosphere as the environment to avoid the possible deleterious effects of a pure oxygen atmosphere during long-term spaceflight. This change requires modification of the environmental control unit and the associated plumbing, heating units, and tankage. A waste liquid retention system will also be installed so that the discharge of unneeded liquids can be made at controlled times so as not to interfere with experiment activities.

Changes will be made to the software elements of the guidance and navigation system to accommodate the workshop and ATM missions requirements.

Major definition analyses of the modifications to the spacecraft were undertaken in fiscal year 1967. Design and development of the major modification kits will begin in fiscal year 1968 with component and material testing of prototypes of the modified subsystems commencing during this year. Procurement of the propellant and cryogenic tankage has been initiated.

Funding during fiscal year 1969 provides primarily for the detailed engineering fabrication, checkout, and test of the modified subsystems prior to their installation in block II command and service modules. It is planned that all manufacturing of the modification kits for the first command and service module will be completed during fiscal year 1969. The modification kits include those for the environmental control systems, electrical systems, electronics, fluid systems, crew systems, reaction control systems, communication systems, and the service propulsion system. Start of installation of the modifications in spacecraft will be deferred to as late as feasible and will not begin until early in calendar year 1969.

The Apollo applications program will include extended duration missions on the lunar surface greater than the 1-day stay times of the Apollo program.

Feasibility studies directed toward modifying the lunar module to operate for a stay time of 3 days were performed during fiscal year 1967, with preliminary design of the modified spacecraft being conducted during fiscal year 1968.

Fiscal year 1969 funding provides for the preparation of vehicle and test specifications and the initial procurement of long lead hardware. Test programs for the additional cryogenic tankage and the solar cell array for electrical power will be started.

EXPERIMENTS

	1967	1968	1969
Definition	$10,974,000	$21,000,000	$25,000,000
Development	26,626,000	118,000,000	165,300,000
Total	37,600,000	139,000,000	190,300,000

Apollo applications experiments cover a wide range of objectives in the fields of space medicine, science, applications, technology, and engineering. The definition and development of experiment payloads to meet these objectives will include activity by elements of NASA, other Government agencies and the scientific and industrial communities.

DEFINITION

Unlike preceding manned space flight projects, in which the successful demonstration of the basic systems capability was the principal objective, Apollo applications must achieve its objectives primarily through the judicious selec-

tion and carefully planned accomplishment of specific experiments. Therefore, the early and accurate definition of the experiments and experimental systems in this program is absolutely vital to eventual mission success and the achievement of program objectives.

Before an experiment can be committed to an on-going flight program it must be determined to be feasible for missions in the program and be assessed in terms of its specific contribution to the program objectives. In addition, it must be well defined in terms of requirements for funding, schedule, power, temperature, volume, and other mission constraints. Formal approval for inclusion in a flight program is given by the Manned Space Flight Experiments Board which bases its decisions on the facts developed in the definition process. The program manager must be assured not only that the experiment is suitable but that it can be smoothly incorporated in the program and managed effectively.

In fiscal year 1969 the funds requested for experiment definition will be used principally to clarify and define candidate experiments for the Saturn V workshop and to determine what experiments and equipment can provide the most effective post-Apollo exploration of the moon. Leadtimes are such that this definition work must begin now along with the preliminary design studies.

A major portion of the 1969 definition funds will be required to translate the experiment portion of potential payload capability of the Saturn V workshop into specific experiments which utilize man's capability to perform effectively in space for an extended period of time.

A continuing program of experiment definition will be required in fiscal year 1969 in order to support the goals identified for lunar exploration. To do this, definition funds are required in 1969 which will enable us to select mobility devices for the lunar surface. In addition, experiment definition will continue in support of the scientific disciplines which are required to carry out an effective program of scientific exploration. Definition studies will also be conducted which will lead to the grouping of related experiments into mutually supporting experiments packages both for lunar surface and lunar orbital investigations.

DEVELOPMENT

The measure of success in the Apollo applications program will be the degree to which the planned experiments meet the overall objectives of investigating, demonstrating, and utilizing man's effectiveness in space, extending his useful staytime, and contributing to the basic store of human knowledge. Each of the experiments currently included in the program will contribute substantially to one or more of these objectives.

Development of the Saturn I workshop has been started. The basic piece of hardware involved in this system is a S–IVB stage modified to be suitable for human habitation. Included in this payload section will be: (1) an airlock which will permit crew transfer from the command and service module to the workshop without extravehicular activity; (2) a multiple docking adapter which will permit more than one space vehicle to rendezvous and dock with the workshop simultaneously; and (3) systems which will make the workshop a habitable and effective space vehicle for a long period of time.

The concept of the orbital workshop is particularly promising for long-duration flights in earth orbit. In 1969 we plan to initiate a substantial extension of this capability by beginning work on the Saturn V workshop, which will provide a much greater capability than the present generation workshop. This concept provides for inserting the workshop into orbit with a first and second stage Saturn V vehicle and provides a potential payload increase of 200,000 pounds. The internal systems, experiments, and equipment composing this payload will be installed and ready for use prior to launch.

The other major piece of experiment hardware initiated in prior years is the Apollo telescope mount (ATM). Whereas the basic purpose of the Saturn I workshop is to provide a suitable platform for a large number of multidisciplinary experiments including the study of man's effectiveness in space, the ATM is devoted entirely to astronomy. The focus of the project will be on the scientific study of the Sun. The surface of the Sun, the sunspot cycle observable there, and the nature and pattern of the solar flare activity erupting from the Sun hold the key to understanding the basic forces and elements which control the solar system. The Orbiting Solar Observatory (OSO) unmanned spacecraft provided the first opportunity to study the Sun without hindrance from the Earth's atmosphere.

The ATM will provide a significant increase in the quality and depth of our knowledge of the Sun by providing (1) greater pointing accuracy than was possible with the smaller OSO; (2) the capability of film return which can provide better quality pictures than were previously possible; and (3) most importantly, the selective discrimination capabilities of a man can be used to concentrate on phenomena of the greatest scientific interest.

The basic ATM system will be derived from the lunar module being developed for Apollo. The ascent stage of the lunar module will be modified and will serve as a command post for two astronauts conducting the experiments. The descent stage is replaced by a structural rack with associated power and pointing equipment which contains the various experiments to be flown.

Major contractor development effort is currently in process on the systems and components required for most of the major experiments described above. The basic pieces of hardware required for the workshop are well into their development phase at present. The modification of the basic S–IVB, which will convert the spent stage into the workshop, is being done by the McDonnell-Douglas Corp., Huntington Beach, Calif. An extensive testing program utilizing boilerplates and special test hardware is currently in process and will continue through fiscal year 1969.

The airlock module is currently under development by the McDonnell-Douglas Corp. in St. Louis, Mo. A test article is being fabricated and a test program utilizing this article will begin in 1968 and extend through 1969. Initial fabrication has begun on the first flight article, which will be ready for delivery to Cape Kennedy in late 1969.

The multiple docking adapter is being developed and fabricated in-house by NASA at the Marshall Space Flight Center, Huntsville, Ala. Design of this unit has been in process for a year. An engineering mockup has been built and the fabrication of a structural test unit is currently in process. Structural and vibration testing of this unit is scheduled to begin before the end of fiscal year 1968 and extend into fiscal year 1969. Manufacture of the initial flight unit will begin in 1969 and will be completed early in fiscal year 1970.

Work is also in process on the ATM at the Marshall Space Flight Center, with major subsystem development having been underway for a year. Fabrication and assembly of a complete mockup was initially completed in early 1967 and the article was recently updated to incorporate results of the continuing design work. A neutral buoyancy test article has been built and will be tested shortly. Fabrication of a structural test unit is currently in process with testing scheduled to begin before the end of fiscal year 1968. Five specific experiments comprised of 13 major instruments have been selected for the ATM and are currently in the process of fabrication. These include White Light Coronagraph, being developed by the High Altitude Observatory, Boulder, Colo., an ultraviolet spectroheliograph being developed by the Naval Research Laboratory, Washington, D.C.; an X-ray spectographic telescope being developed by American Science & Enginering Co., Cambridge, Mass.; an X-ray telescope being developed at the Goddard Space Flight Center in Greenbelt, Md., and an ultraviolet scanning spectrometer being developed by the Harvard College Observatory, Cambridge, Mass.

MISSION SUPPORT

	1967	1968	1969
Payload integration	$3,900,000	$21,000,000	$31,000,000
Operations	800,000	7,200,000	17,000,000
Total	4,700,000	28,200,000	48,000,000

Payload Integration includes mission payload analysis and systems engineering, design, development, fabrication, test, and program management support for the integration of experiment and resupply payloads into Apollo Applications space vehicles. It provides requirements, plans, and program data for the integration of payloads; performance and interface specifications; design, test, and checkout plans and procedures; and ground and in-flight support equipment. Overall program coordination, engineering analysis and design of the integration of spacecraft and payloads into a coordinated space system qualified for flight is provided. Fiscal year 1967 efforts were concerned with preliminary

definition of the payload integration requirements. Fiscal year 1968 funds support final definition and the implementation of design and development efforts. Fiscal year 1969 funding will support continued efforts in such areas as experiment grouping, payload carrier design development and integration, experiment support requirements, and feasibility, compatability and systems interface analyses for all near term Apollo Applications missions. The Martin Co., Denver, Colo., is the prime contractor for payload integration.

Operations include efforts at the Kennedy Space Center and the Manned Spacecraft Center that are directly concerned with prelaunch, launch, flight, crew, and recovery activity. In fiscal year 1967 operations efforts were related to accomplishing definition of Apollo Applications requirements peculiar to prelaunch, launch, mission planning, and mission control. Fiscal year 1968 funding is supporting activities associated with crew training, flight operations, mission analysis, landing and recovery, launch operations, and launch support.

Fiscal year 1969 funds are required for continuation of current year efforts, procurement and/or modification of flight simulators and associated maintenance and operation and flightcrew training and related equipment procurements in preparation for Apollo Applications flights scheduled in early 1970.

Advanced Missions Program

Mr. Evins. The summary of your advanced missions program is next.

Tell us what you are going to be working on in the advanced missions program, Dr. Mueller, please.

Dr. Mueller. The advanced missions program this year is to provide for the orderly planning of those things that will follow the Apollo and Apollo Applications program. We need to do now the practical planning that will permit us to make decisions in the future as to which way Manned Space Flight should go, what are the next major steps that can be taken, so that we have a sound basis for making those decisions.

I note with some interest that this has been of congressional concern, and congressional support has been forthcoming for planning for our construction of facilities in advance.

SPACE STATIONS AND LAUNCH VEHICLES

The same thing needs to be done for our research and development programs. We need to make plans for what a space station could become. What are the characteristics of the space station? What can it do for us here on Earth? What are the requirements that must be met by such a space station?

We need to look at the next step in launch vehicles, and we need to look at the step beyond that to be sure that the next step we take in launch vehicles is consistent with our own long-range objectives and what we expect to have.

I hope that out of this year's advanced missions program we will be able to define a launch vehicle that will reduce by an order of magnitude the cost of moving people into orbit and bringing them back down again. Once you do reduce the cost of getting into and out of orbit by an order of magnitude, a whole new range of economically feasible and economically desirable uses of space becomes available to you.

I think that perhaps one of the most important single aspects is to do that necessary work, those necessary studies, which will permit

us to reduce the cost of getting into orbit by order of magnitude, for example, from some $500 a pound to $50 or even to $5 a pound.

Mr. EVINS. You state that there has developed a strong conviction among space planners that a space station is logical, practical, and necessary in development and use of our national capability for Manned Space Flight. Once in orbit, the station would serve as a semipermanent base of operation.

EARTH-ORIENTATION OF SPACE STATIONS

Dr. MUELLER. And we are providing here the studies that will serve to plan for the logistic support of this base or outpost in space.

I think perhaps the most significant use that we will be making of these devices, or of these space stations over a period of time, will be for a much better understanding of what is happening on Earth and how to influence what is happening on Earth.

Mr. EVINS. You have these plans and you have some alternate plans. What are some of the alternate plans?

SPACE RESCUE

Dr. MUELLER. The alternate studies we are looking at include, for example, studies of safety, or space rescue. How can we rescue people from a space station or from the lunar surface? We are looking at ways to improve the safety of the operation itself. For example, one of the problem areas is how to check out equipment in orbit so that you can get as much confidence about it while operating in space as you did when you launched it from the launch pad? These are the kinds of areas in which continued study is necessary so that we can bring to bear the best we know in these areas. They support our present flight program in that sense.

Mr. EVINS. You are programing $5 million for advanced missions studies. Have you given consideration to the ultimate planning costs?

Dr. MUELLER. In the case of the advanced studies, we believe it is important to continue to carry a small level of study funds as we go forward, because you need a continuing effort at understanding what the new technology can bring to bear. The advanced study budget figure does not in itself grow. From it new programs are defined which are then presented to the Congress and decisions are made by the President first, and then the Congress, as to whether or not these new programs ought to move forward. Without this, you are not in a position to make reasoned decisions.

Mr. EVINS. Dr. Mueller, I had a staff member, an attorney, review the program to get an objective, independent review, and I shall read you his comment here—which is a general one, that I think the average person feels.

The programs for the future appear very indefinite. Has NASA projected the costs of future space programs? Perhaps we should know where we are headed and try to determine priorities of programs because of the urgent need for social programs and reforms on Earth.

This is in the minds of everybody.

Dr. MUELLER. Yes, sir; and it is from the results of these studies that hopefully the Congress and the President can make reasoned deci-

sions as to the trade-offs. Without these studies, you really can never become definite in deciding upon alternatives.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages RD 3–1 and RD 3–2. (The pages follow:)

OFFICE OF MANNED SPACE FLIGHT, ADVANCED MISSIONS PROGRAM

Program objectives and justification

The objective of the Advanced Missions program is to examine advanced manned space flight mission concepts in support of timely decisions with regard to future programs. Included are: logical extensions of the NASA space program through analysis of present hardware systems for growth potential; development of requirements for future systems; guidance for research and technology activities; provision of technical information and cost data upon which future program decisions can be based; and initiation of the definition, preliminary design and specification of probable future missions.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Advanced missions studies	$6,200,000		$5,003,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
John F. Kennedy Space Center, NASA	$500,000		$500,000
Manned Spacecraft Center	2,800,000		2,000,000
Marshall Space Flight Center	1,600,000		2,000,000
NASA Headquarters	1,300,000		500,000

BASIS OF FUND REQUIREMENTS

ADVANCED MISSIONS STUDIES

	1967	1968	1969
Advanced studies	$6,200,000		$5,000,000

Advanced studies have in past years encompassed a wide spectrum of missions and related hardware. They were grouped into the categories of Earth Orbital studies, Planetary Mission studies, and Flight Vehicle studies. The advanced missions program office in the Office of Manned Space Flight was organized along lines that reflected this categorization. Recently, however, the Advanced Manned Missions program office was realigned to concentrate on the immediate task of the manned earth orbital space flight program both with respect to direct support of the later phases of the Apollo Applications program and to the long term implications of these plans. As a result of manned space flight experience to date and of a series of studies conducted over the past several years, there has developed a strong conviction among space planners that a space station is logical, practical, and necessary in the development and use of our national capability for manned space flight. Such a station, with its supporting equipment and expendables, could be launched with a Saturn V. It would make use of equipment and experience developed for Apollo, the orbital workshop, and other projects such as MOL, to the extent practical. Once in orbit, it would serve as a semi-permanent base of operation for astronomical and other scientific observations, earth resources studies, biomedical research, technological developments, and for operational

research and development to further enhance our national capability for manned space flight. By utilizing a modular approach, with a capability to operate in conjunction with automated but man-tended spacecraft in the near vicinity, great operational flexibility can be achieved. This flexibility should make the space station system capable of meeting a wide variety of national needs.

A further aspect of the flexibility envisaged for the system, is that its occupancy and use could be varied from full crew/full time to a part time or standby operation, depending on requirements of users, funding availability, or other factors. The space station would constitute a continuing capability, in being, in orbit to serve national needs in accordance with future decisions on specific objectives and on resources to be allocated.

SPACE STATION STUDIES

Most of the funds requested for fiscal year 1969 will be expended on efforts to provide logical long term direction for manned earth orbital operations. Lead times are such that this work cannot be deferred if we are to maintain a national capability for a continuing manned space flight program in earth orbit. The preliminary design and definition effort will build on previous work and will include all aspects of space station missions and configurations, including the related logistics transportation system.

INTERMEDIATE VEHICLES

A portion of the space station study funds will be allocated to determining the need for a launch vehicle to carry out logistic support of the space station. The determination of need for a logistic support vehicle is part of a large picture, however, since other programs and agencies may also have requirements for a vehicle capable of drastically reducing the cost of transportation to orbit. In particular, NASA will join with DOD in evaluating possible future space flight systems and the extent to which future requirements can best be met with NASA hardware, DOD hardware, or jointly developed systems.

OTHER ADVANCED STUDIES

In addition, it is planned in fiscal year 1969 to continue some advanced studies of other missions and vehicles, particularly those applicable to lunar exploration.

Physics and Astronomy

Mr. Evins. Let's take a look at your physics and astronomy program. You are asking for $141,900,000. The physics and astronomy program is directed toward the increase of our knowledge of the earth, sun, the interplanetary medium, and the nature of the universe. It is very laudable, but is it necessary to give this highest priority in view of other requirements?

PROGRAM RESULTS

Dr. Naugle. Mr. Chairman, this has been a very productive program over the past decade. This is the program out of which the discovery and the knowledge of the radiation belt has come. We have gotten a great deal of information about the environment of the earth, about interplanetary space.

The kind of astronomy we do in the space program is something you can only do from space. I imagine that Dr. Newell, in past years, has discussed and pointed out the fact that astronomers for the past 200 or 300 years, since the beginning of astronomy, have been limited in the observations that they can make to a very narrow visible window in the atmosphere. The type of energy that a star or an astronomical object emits is about 15 decades of frequency range. An astronomer on the earth can only observe about a little less than one decade of that.

By taking telescopes outside the atmosphere, an astronomer can see the whole broad spectrum of energy that is emitted by an astronomical object. We feel that in astronomy, the introduction of space astronomy will be a step forward comparable to the actual introduction of the telescope.

The knowledge that we gain in this also underlies and is applied to the practical problems of communications, meteorology, and the study of the earth resources. We think this physics and astronomy program we are presenting is a very good one. There are a large number of things that need to be tackled and we feel the——

Mr. EVINS. How long have we been studying the moon, the atmosphere, the sun, and the earth's environment? Since the beginning of time?

Dr. NAUGLE. Since man first began to make recorded observations. I would say it goes back several thousand years.

EFFECT OF CUTBACK TO 1967 LEVEL

Mr. JONAS. We all know the importance of astronomy, physics and all of the activities in this program, but is it going to destroy the program if we cut you back to 1967 levels? We can't just continue to expand every program the Government is involved in when we are faced with a balance-of-payments problem, an outflow of gold and inflation that is pauperizing American citizens faster than we can get them out of poverty.

There is a limit. I don't subscribe to the view that this country is so rich that it can have guns and butter too, and do everything at one time that we would like to do.

Now, what would it do to this program if we reduced it to $129,800,000? That was the level of your operations in 1967, since which time we have had about $30 billion in deficits and face another $20 billion one next year.

Dr. NAUGLE. Mr. Jonas, if you make that sort of a reduction in the budget we would simply have to eliminate some of the projects that we have described to you.

Mr. JONAS. You could stretch them out or defer them.

Dr. NAUGLE. If you stretch them out or defer them, you would delay getting that information.

The point that I want to make about this is while our security is threatened in a very real and immediate way in Vietnam, it is also threatened in a more abstract but just as real way by the efforts that the U.S.S.R. is making in the development of science and technology.

Mr. JONAS. We are not proposing to cut out development in science and technology either. $129 million is a pretty good size sum of money. When we are faced with a fiscal crisis, can't we operate at the 1967 level without destroying the program?

NASA COORDINATION WITH DOD

Mr. EVINS. What coordination do you have with DOD in these programs?

Dr. NAUGLE. Mr. Chairman, our space science and applications programs is coordinated regularly with the DOD. We have what is

called an unmanned spacecraft panel which is a part of the Astronautics and Aeronautics Coordinating Board. All of the efforts we are making here are known to the DOD and there is no duplication.

Mr. EVINS. How much is DOD spending in physics and astronomy programs? How much is the National Science Foundation expending in these programs?

Dr. NAUGLE. I don't have those figures right now, Mr. Chairman.

Mr. EVINS. Well, aren't you concerned? Aren't you interested in what the other allied agencies are doing in this field?

Dr. NAUGLE. I believe—and this is something that would have to be checked with DOD—that their whole expenditures in the area of space sciences are of the order of around $10 or $15 million.

U.S.S.R. EFFORT IN SPACE SCIENCE

Mr. WYMAN. How much do we know about the efforts that the U.S.S.R. is making in the development of science and technology to which you have just made reference?

Dr. NAUGLE. The report that the Committee on Science and Astronautics of the U.S. House of Representativves published, which was put together by Dr. Charles Sheldon, estimates that over the period from 1957 to 1967 the U.S.S.R. has launched about 123 scientific missions, which are primarily civilian in nature. The United States in that time has launched about 178, primarily of a civilian nature.

Mr. WYMAN. In relation to their overall spending how much are they attributing to this particular field? How much are they spending on it? Is it anything like what we are spending in terms of comparable activities?

U.S.S.R. EXPENDITURE RATE

Dr. NAUGLE. In these terms, they are spending something like from a half to two-thirds of what we are, based on their launch rates.

Mr. WYMAN. Do we actually know what they are doing in this field?

Dr. NAUGLE. We know after the fact, after a launch. They make their data available in international scientific meetings, just in the same way that we do. They have published the results from their Venus mission at about the same time that we had a major public release of ours. So we know that they have an active space science program. We see the results of it.

We do not know in advance what they will be doing. This would help if we knew that. Of course, they are helped from the standpoint of knowing what our plans are.

Dr. MUELLER. If I could add just one word to that, the best estimates that I have been able to obtain indicate that the Russians are spending somewhere between 25 and 50 percent more in real dollars in their space program in total than we are. Essentially what they have done is maintain their level, their expenditure constant, and slightly increased it.

Mr. WYMAN. When you say 50 percent more, Dr. Mueller, do you mean in relation to their overall budgetary figure they have relatively maintained a figure for their space effort that would be in the order of $750 million or a thousand million?

Dr. MUELLER. Something like twice the percentage of their gross national product as compared to the percentage of our gross national product spent on our space program.

Mr. WYMAN. In other words, your overall spending now for the whole picture shows $66 billion?

Dr. MUELLER. Yes.

Mr. WYMAN. You say they are spending, in relation to their budget, at a level somewhere between 25 and 50 percent above that?

Dr. MUELLER. That is correct, in dollars, and in terms of their gross national product, something like twice as much as we are spending.

Dr. NAUGLE. Mr. Wyman, there is another statistic you might be interested in and that is, since the space program began the Russians have launched about 19 planetary missions during a period of time we have flown about five.

Mr. EVINS. Gentlemen, the National Science Foundation is asking for $25 million in their budget for astronomy and $33 million in physics. So you are not alone in this field, and you don't even know how much the Department of Defense is spending.

Dr. NAUGLE. I am sorry, Mr. Chairman, I did make an estimate. I believe in the DOD the figures are of the order of $15 million.

JUSTIFICATION MATERIAL

Mr. EVINS. Mr. Reporter, insert in the record page SSA 1, volume 2, which is the summary of space science and applications programs; and pages RD4–1 through 4–18.

(The pages follow:)

RESEARCH AND DEVELOPMENT BUDGET PLAN FOR SPACE SCIENCE AND APPLICATIONS PROGRAMS

Program	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Physics and astronomy	$129,800,000	$142,950,000	$141,900,000
Lunar and planetary exploration	184,150,000	141,500,000	107,300,000
Launch vehicle development	31,200,000		
Launch vehicle procurement	117,650,000	127,100,000	128,300,000
Bioscience	42,000,000	41,800,000	48,500,000
Space applications	71,300,000	93,500,000	112,200,000
Total	576,100,000	552,850,000	538,200,000

OFFICE OF SPACE SCIENCE AND APPLICATIONS, PHYSICS AND ASTRONOMY PROGRAM

Program objectives and justification

The physics and astronomy program is directed toward the increase of our knowledge of the earth, sun, the interplanetary medium, and the nature of the universe. The program is a coordinated effort for national participation in research which involves: the space environment of the earth, the sun, and the solar relationship to the earth's environment and to interplanetary space, interplanetary dust, meteors, comets, stars, nebulae, galaxies, interstellar and intergalactic phenomena, and the basic nature of the universe. The program uses a variety of tools including automated observatories, manned spacecraft, interplanetary spacecraft, explorers, sounding rockets, balloons, aircraft, ground-based observatories, and laboratory and theoretical research. Each tool is selected for a specific application because of a unique capability or because it is the most efficient way to do the research.

Many of the studies contribute to the overall objective of the program as well as provide knowledge for a specific area. Although many practical applications have been made of the knowledge gained, the primary objective continues to be

one of basic research dedicated to the expansion of knowledge. Therefore, considerable effort has been expended to insure that the knowledge gained is made available and that the program is integrated with the programs of educational and scientific institutions.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology/advanced studies	$20,365,000	$23,050,000	$25,300,000
Solar observatories	10,106,000	12,100,000	12,000,000
Astronomical observatories	27,700,000	40,400,000	35,200,000
Geophysical observatories	24,770,000	20,200,000	13,200,000
Pioneer	6,900,000	7,000,000	6,000,000
Explorers	18,224,000	17,300,000	23,200,000
Sounding rockets	20,000,000	20,000,000	22,000,000
Data analysis	1,735,000	2,900,000	5,000,000
Total	129,800,000	142,950,000	141,900,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Manned Spacecraft Center	$40,000	$359,000	$300,000
Marshall Space Flight Center	158,000	36,000	40,000
Goddard Space Flight Center	97,020,000	109,881,000	105,500,000
Jet Propulsion Laboratory	339,000	196,000	400,000
Wallops Station	496,000	1,200,000	950,000
Ames Research Center	9,828,000	9,383,000	9,100,000
Electronics Research Center	60,000	140,000	140,000
Flight Research Center	10,000		
Langley Research Center	1,607,000	1,532,000	2,930,000
NASA Headquarters	20,242,000	20,223,000	22,540,000

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY/ADVANCED STUDIES

	1967	1968	1969
Particles and fields	$5,867,000	$5,731,000	$5,900,000
Ionospheres and radio physics	1,457,000	1,263,000	1,300,000
Interplanetary dust and cometary physics	1,725,000	1,652,000	1,600,000
Solar physics	4,048,000	3,699,000	4,400,000
Astronomy	3,391,000	3,342,000	4,500,000
Interdisciplinary space science	2,615,000	6,256,000	4,800,000
Spacecraft technology and advanced studies	1,262,000	1,107,000	2,800,000
Total	20,365,000	23,050,000	25,300,000

In the supporting research and technology program, we support the basic research required to provide for a firm foundation for the physics and astronomy program. It is in this program that development of new instruments is initiated. Laboratory, balloon, and aircraft data are provided as a basis for evaluation of flight results.

PARTICLES AND FIELDS

Work in this area is concerned with understanding the processes which lead to the production of galactic cosmic rays, the role of cosmic rays in evolution of a galaxy and properties of the interstellar medium, the dynamics of the magnetosphere, the generation of nonthermal solar particles and their dynamics, and the determination of the character of ultrahigh energy cosmic rays. We are continuing the work in this area at about the same level as last year. The development of trapped and auroral radiation detectors and magnetometers is receiving emphasis this year. The slight increase is in reality the result of the reduction of forward funding in fiscal year 1968 to maintain the program in the face of a constrained budget.

IONOSPHERES AND RADIO PHYSICS

Major problems in ionospheres and radio physics involve the understanding of the basic processes of formulation, change and decay of ionization, the perturbations of the ionosphere and atmosphere, and particle wave interactions, plasma and very low frequency wave phenomena. These problems are being investigated through laboratory and ground-based research.

INTERPLANETARY DUST AND COMETARY PHYSICS

Research in this area involves the study of extraterrestrial particulate matter; its characteristics, origins, structure, and behavior. Work in determination of the composition and distribution of cosmic dust by collection techniques and study of the aurora and polar cap phenomena during solar maximum is also funded in this program which is being held at about the fiscal year 1968 level.

SOLAR PHYSICS

Primary research in this area is concerned with two major problems; understanding the quiescent sun and solar activity, and the development of instrumentation. This work involves ground, aircraft, and balloon-borne observations; theoretical studies, and development of instruments for spacecraft observations. The increase shown in this area is attributable to the development of instrumentation for observations from the CV–990 research aircraft and to expansion of laboratory and theoretical research in support of a proposed future expansion of the solar astronomy flight program.

ASTRONOMY

Astronomical research and technology efforts provide for some augmentation of effort in those areas where major changes in performance are required to improve space astronomy capability. Advanced development of instruments includes work on narrow band filters, selective coatings, polarizing devices, image tubes and image intensifiers for UV and X-rays, films and film handling techniques, and telescope systems with offset pointing capability. The problems of understanding the source of gamma rays and assessing the nature of X-ray stars is requiring the development of large spark chambers and balloon observations of hard X-rays. Other research includes theoretical studies of stellar astrophysics, laboratory spectroscopy, and ground-based, balloon, and aircraft observations. Advanced development work is underway on experimental tests of the validity of Einstein's theory of relativity.

INTERDISCIPLINARY SPACE SCIENCE

This area provides for support of the Space Science Board and for research fellowships administered by the National Academy of Science, which provide an opportunity for selected fellows to work with scientists at the Goddard Space Flight Center in theoretical and laboratory research. Support of the Astronomy Missions Board falls in this area. Balloons, launch support, and a small research program on the balloons are supported.

This area also provides for procurement of the additional core storage and computer support for the Goddard Institute for Space Studies. The core storage is being procured in fiscal year 1968. In fiscal year 1969, it provides for computer rental, programming, and support costs for theoretical studies in astrophysics and for development of atmospheric models using meteorological satellite data.

SPACECRAFT TECHNOLOGY AND ADVANCED STUDIES

Studies to establish the concepts, characteristics and feasibility of future missions are funded in this area. Studies of materials and techniques for advanced astronomical, geophysical, and interplanetary spacecraft subsystems are being continued. Expansion in fiscal year 1969 takes place here to lay the ground work for a major program in space astronomy. The primary effort will be system definition studies aimed at the development of ASTRA, a system which combines the automated precision observatory with manned support. Other work to be supported includes some definition of the National Astronomical Space Observatory concept.

SOLAR OBSERVATORIES

	1967	1968	1969
Orbiting Solar Observatory (OSO):			
Spacecraft	$6,519,000	$6,055,000	$7,308,000
Experiments	3,587,000	6,045,000	4,692,000
Subtotal OSO	10,106,000	12,100,000	12,000,000
Delta (launch vehicle procurement program)	(2,000,000)	(2,600,000)	(4,050,000)
Total (including launch vehicles)	(12,106,000)	(14,700,000)	(16,050,000)

The Orbiting Solar Observatory (OSO) is a stabilized satellite above the earth's atmosphere to obtain fundamental knowledge of the sun, and the effect of the sun on the solar system using carefully selected scientific experiments. The OSO's permit investigation of the solar spectrum from the high energy gamma radiation through the X-ray and ultraviolet to the visible region in order to study the long-term changes in solar radiation, as well as the more rapid, short-period changes. The first two of the approved OSO missions were launched during a period of minimum solar activity; two more missions launched in 1967 are obtaining data during a period of increased activity; and the last three will be launched during and following solar maximum. This will provide data during the major part of the 11-year solar cycle.

The OSO's are spin stabilized spacecraft with a demonstrated capability of pointing the instruments in the "sail" section, at the center of the sun, with an accuracy of 10 arc seconds. Current spacecraft in the series also are able to scan across the solar disc. This capability will be enhanced to permit both offset pointing and offset raster scanning. The wheel section spinning at about 30 r.p.m. permits investigation of radiation from the galaxy and the intergalactic and interstellar space.

The program consists of eight approved missions, five of which have been launched and three of which remain to be launched in the next 3 years. All OSO's are launched by the Delta vehicle into a nominal 350 statute mile circular orbit inclined 33 degrees.

OSO–I and OSO–II were launched in 1962 and 1965, respectively. Both have ceased operating but during their useful life, they obtained more than 8,600 hours of scientific data.

OSO–C was launched August 25, 1965. Malfunction of the vehicle's third stage prevented achievement of orbit. The payload of this mission was rescheduled to fly on the OSO–E spacecraft.

The fourth OSO flight (OSO–E) was successfully launched on March 2, 1967, and was designated OSO–III. This spacecraft which contained nine experiments from the Air Force Cambridge Research Laboratory, the Goddard Space Flight Center, the Universities of Michigan, Rochester, and California, Massachusetts Institute of Technology, and the Ames Research Center provided a capability to study the gamma-ray, X-ray, ultraviolet, and visible missions from the sun, earth, the galaxy, and other regions of the celestial sphere. Analysis of data from OSO–III is continuing. Preliminary results were made available by the experimenters to the scientific community during meetings held in 1967 and will be published in 1968.

The fifth OSO (OSO–D) was placed in orbit on October 18, 1967, and became OSO–IV. This spacecraft also carried instrumentation for nine experiments. Principal investigators from Harvard College Observatory, American Science and Engineering, Naval Research Laboratory, University College, London (England), and Lawrence Radiation Laboratory are attempting to better understand the physical processes by which the sun influences the earth and to continue to advance our understanding of the sun's composition and behavior. The Harvard scientists have obtained over 4,000 ultraviolet spectroheliograms of the sun. These data, some of which have already been published, will permit development and assessment of realistic models of the sun and will provide insight into the problem of energy transport through the chromosphere and corona.

The three remaining OSO missions (OSO–F, –G, and –H) are scheduled to be launched about 1 year apart starting in 1968. Payloads for these missions have been selected and the hardware is in various stages of design, fabrication, test, and integration.

Project management for the OSO systems, including the Delta vehicle, is assigned to the Goddard Space Flight Center. The spacecraft are being developed by Ball Brothers Research Corp. Ball Brothers is responsible for experiment instrumentation, observatory test and delivery to the launch site of a flyable system. In-orbit operations are controlled from Goddard Space Flight Center through the STADAN telemetry system.

Funding prior to fiscal year 1967 provided for the design, development, integration, testing, operations, and data analysis of the first two OSO's to orbit the earth and the OSO–C mission which failed. These funds also provided for continuing work on the OSO–III and OSO–IV missions and for the initiation of work on the spacecraft and experimental packages for the last three missions.

Fiscal year 1967 funds provided for the launch preparations, launch and initial orbit operations of OSO–III; completion of the test and integration of OSO–IV; and continued the work on the last three missions.

Fiscal year 1968 funds support the launch, orbital operation, and initiation of data analysis for OSO–IV; continued orbital operation, data reduction and analysis for OSO–III; and continued the development work on the OSO–F, –G, and –H missions.

Fiscal year 1969 funds will provide for publication of data from the OSO–III and OSO–IV, for completion and launch of the OSO–F, and continuing hardware effort on the OSO–G and OSO–H.

Fiscal year 1966 and prior funding for the OSO project, including launch vehicles, was $59,279,000. Fiscal year 1970 and later funding requirements to complete the eight-observatory program are estimated to be $7,350,000, including launch vehicles.

ASTRONOMICAL OBSERVATORIES

	1967	1968	1969
Orbiting Astronomical Observatory (oao):			
Spacecraft and support	$21,313,000	$35,004,000	$31,074,000
Experiments	6,387,000	5,396,000	4,126,000
Subtotal OAO	27,700,000	40,400,000	35,200,000
Centaur (launch vehicle procurement program)	(6,003,000)	(7,060,000)	(9,500,000)
Total (including launch vehicles)	(33,703,000)	(47,460,000)	(44,700,000

The orbiting astronomical observatories (OAO) program requires the development of space-borne hardware and operational capability which must meet the most advanced scientific and technical requirements of the space program. This major advance in the state-of-the-art is essential in realizing the potential of space astronomy. It will provide opportunities to obtain astronomical observations of celestial objects and phenomena in those regions of the electromagnetic spectrum that are inaccessible to ground-based instrumentation because of atmospheric absorption. Experiments selected for the OAO missions will: perform exploratory sky mapping surveys in the ultraviolet region, obtain moderate resolution spectrometer data of stars down to the 10th magnitude, carry out high resolution ultraviolet spectral analysis of faint objects, and make studies of galactic X-rays.

The OAO spacecraft is designed to point in any direction with an accuracy of 1 minute of arc during any particular astronomical observation. Pointing accuracy of 0.1 second of arc will be obtained using sensors associated with the experiment instrumentation. The attitude control system performs five functions: stabilization and solar orientation subsequent to orbital injection or following loss of stabilization; roll search to acquire guide stars; slow to and hold at attitudes required for scientific observation; hold in inertial space without star trackers; and sun bathing, which provides a safe observatory holding mode while providing for maximum recharge of the spacecraft batteries.

Extensive ground facilities in the United States and in four other countries (Ecuador, Chile, Australia, and Madagascar) are provided for control of the mission in orbit and to receive telemetry for transmission to the OAO Control Center at the Goddard Space Flight Center.

The first OAO (OAO–I) was launched on April 8, 1966. It achieved orbit, performed planned functions for a short period of time, and attained the design

objectives in a number of complex areas. The spacecraft failed on April 10, 1966. No scientific data were obtained from any of the scientific instruments.

The problem areas identified with the OAO–I operation have been thoroughly analyzed and reviewed. Based on the knowledge gained from the first flight, modifications have been made to the OAO including testing for the subsequent observatories, as well as expanded ground operations facilities. In addition, a significant number of improvements have been made to the OAO system to enhance the prospects for the success of the next three flight missions.

The second OAO (OAO–A2) is on schedule for a 1968 launch. The spacecraft subsystems have been modified, on the basis of the OAO–A1 tests, to assure satisfactory long-term operation of the power subsystem; provide better thermal environment; prevent arcing in the star trackers; minimize noise susceptibility and generation; and provide a safe holding mode independent of the star trackers. The ground systems to support this and follow-on missions have been improved and expanded to increase the real-time knowledge of the in-orbit operation. This mission will carry the Wisconsin experiment package, identical to the equipment flown on OAO–I, and the Smithsonian astrophysical observatory celescope experiment. The Wisconsin experiment package consists of multicolor filter photometers with spectrometers and eight and 16-inch telescopes.

Measurements will be made of the emission characteristics of diffuse nebulae and the extension of the opacity of the interstellar medium into the ultraviolet. The Smithsonian astrophysical observatory celescope contains four telescopes with ultraviolet-sensitive uvicon image tubes to survey the sky in four ranges. It will map the form and brightness characteristics of faint nebulae and record the brightness of hot stars, primarily spectral type A and earlier.

The third OAO (OAO–B), is to be launched in 1969, will carry the Goddard Space Flight Center 36-inch telescope to obtain absolute spectrophotometry data on stars, nebulae, and galaxies in the higher range. This mission will be the first to include the inertial reference unit, under development by the Massachusetts Institute of Technology to reduce the dependence of the stabilization and control system on the star trackers.

The fourth OAO (OAO–C), scheduled for a 1970 flight, will fly experiments for Princeton University and the University College, London. The Princeton experiment package is a 32-nch Cassegrainian reflecting telescope with a concave grating experiment. Studies will be made of spectra of interstellar gas and of composition and physical characteristics of interstellar gas and dust. The London experiment consists of three telescopes with paraboloidal reflectors, photon detectors, and gas counters to study X-ray emissions and to search for interstellar absorption.

The Goddard Space Flight Center is responsible for the management of the OAO project including the procurement of the spacecraft and experiments. The Lewis Research Center will procure the Atlas-Centaur vehicles and provide the launch services at the eastern test range. The Grumman Aircraft Engineering Corp. has designed and is fabricating the spacecraft. Goddard Space Flight Center will integrate the experiments in the spacecraft, perform the environmental tests, and operate the observatory in orbit.

Development of the OAO spacecraft was initiated in 1960. Funding prior to fiscal year 1967 provided for the design and development of the basic spacecraft; fabrication, integration, and testing of the OAO–I prototype and flight spacecraft; ground operations software and hardware and prelaunch and launch services for the OAO–I; fabrication, integration, and test of the third flight spacecraft; procurement and fabrication of assemblies for the fourth flight spacecraft; development, fabrication, and tests of experiment instrumentation for four flight missions; and initiation of the recovery plan for the OAO spacecraft.

Fiscal year 1967 funds provided for the completion of the analysis of the OAO–I operation and the bulk of the redesign, modification, and retest of the OAO–A2 spacecraft assemblies. A prototype spacecraft (TA–1) in the OAO–A1 configuration was delivered to Goddard Space Flight Center for training personnel in test and flight operation procedures and for electromagnetic compatibility tests. The TA–1 was returned to the spacecraft contractor for rework to the OAO–A2 prototype (TA–2). The planning for the ground support system for the next OAO flight was initiated, as was the associated software and hardware. The instrumentation for the Wisconsin experiment package and Smithsonian astrophysical observatory were delivered to Goddard Space Flight Center

and acceptance tests were initiated. The most essential work on the OAO–B and OAO–C spacecraft and experiment components is being carried out toward the planned launch dates in 1969 and 1970.

Fiscal year 1968 funds provided for the completion of the fabrication and test of the equipments for OAO–A2 spacecraft and the integration of the spacecraft. The acceptance tests of the Wisconsin experiment package and Smithsonian astrophysical observatory instrumentation were completed and the instrumentation was integrated in the spacecraft. The TA–1 prototype spacecraft was converted to the TA–2 configuration. The remaining effort in fiscal year 1968 will be concentrated on performing flight acceptance on the OAO–A2 observatory, testing the TA–2 at qualification vibration levels, performing thermal tests and initiating the modifications and retest on the subsystems for the OAO–B spacecraft. Efforts planned for starting the OAO–C spacecraft structure, the acceptance tests of the Goddard experiment package instrument for OAO–B, and restart of the experiment flight hardware for the OAO–C mission are being delayed due to funding constraints in fiscal year 1968.

Fiscal year 1969 funding will compete the acceptance testing of the OAO–A2 flight observatory, launch of this mission, and initiation of scientific data reduction and analysis. The OAO–B spacecraft will be integrated and tested, the Goddard experiment package flight instrumentation will be tested and integrated in the observatory, and observatory acceptance tests will be started. The OAO–C spacecraft assemblies will be completed and the Princeton experiment package prototype instrument will be tested at qualification levels and the fabrication of the Princeton experiment package flight assemblies will be completed and the instrument assembled.

Fiscal year 1966 and prior funding, including launch vehicle was $197,235,000. Fiscal year 1970 and later funding required to complete four missions is estimated to be $44,537,000, including launch vehicles.

GEOPHYSICAL OBSERVATORIES

	1967	1968	1969
Orbiting Geophysical Observatory (OGO):			
Spacecraft	$16,577,000	$13,376,000	$4,410,000
Experiments	8,193,000	6,824,000	8,790,000
Subtotal OGO	24,770,000	20,200,000	13,200,000
Thor-Agena (launch vehicle procurement program)	(2,000,000)	(2,996,000)	(1,419,000)
Atlas-Agena (launch vehicle procurement program)	(2,000,000)	(3,061,000)	(3,000)
Total (including launch vehicles)	(28,770,000)	(26,257,000)	(14,622,000)

The Orbiting Geophysical Observatory (OGO) program has as a primary objective the accomplishment of a series of scientific measurements for study of the near-earth environment and for correlation of geophysical phenomena with the effluent activity of the sun and with phenomena in interplanetary space.

Four OGO missions, each including 20 or more experiments, have been launched, one each year starting in 1964. These missions have alternated between high altitude, low-inclination orbits for magnetospheric and interplanetary studies and low altitude, nearly polar orbits for global studies of atmospheric and related phenomena.

The most recent mission (OGO–IV; launched July 28, 1967, into a nearly polar orbit) has met all major objectives and continues to perform well with active three-axis stabilization and 18 of the 20 experiments operating. These experiments are providing new data describing the salient characteristics and phenomenology of the atmosphere on a global basis.

OGO–I, launched near the minimum period of solar activity in 1964, continues to operate on a periodic basis and is providing data from 12 remaining experiments. The second OGO, OGO–II, has completed 2 years of operation and, although it is still functional at certain times of the year, data acquisition has been discontinued. OGO–III was the first of the geophysical observatories to provide satisfactory three-axis stabilization for an extended period. It was placed in a spin stabilization mode in July 1966 and has provided continuous data acquisition for magnetospheric studies. Most notable of these has been the first detailed observation of the solar storm ring current by the Van Allen experiment. During

a period in November 1967, all four OGO's with a total of 55 experiments were operating simultaneously in widely separated regions of space.

The timing of the initial OGO missions and the long lifetime has provided good coverage from solar minimum through the period of increasing solar activity. The fifth (OGO–E) and sixth (OGO–F) are scheduled for launch in early 1968 and 1969, respectively, and will extend this coverage through solar maximum. OGO–E, which is in the final stages of testing and launch preparations, includes a number of new and challenging experiments and will be capable of detecting particle energies from a few electron volts to ten billion electron volts. These experiments, together with electric and magnetic field experiments, should make possible the most comprehensive studies of the magnetosphere yet undertaken. Similarly, the complement of OGO–F experiments which are now being integrated into a completed spacecraft for a low altitude polar mission, should provide detailed information on atmospheric physics during the important period of maximum solar activity.

Management of the OGO project has been the responsibility of the Goddard Space Flight Center. Development of the spacecraft system and fabrication and testing of flight observatories is under contract to Thompson Ramo Wooldridge Systems, Inc.

Funding prior to fiscal year 1967 provided for design and development of the basic spacecraft, launch of the first three observatories, beginning work on OGO–D and OGO–E, and support of data analysis for the first two missions.

Fiscal year 1967 funds provided for continuation of preparation of the OGO–D and OGO–E missions, initiation of hardware development for OGO–F, and for continued data support for three operational missions.

Fiscal year 1968 funds are providing for launch of OGO–D, preparation of OGO–E for launch, completion of spacecraft and experiment fabrication for the OGO–F mission, operational support for four OGO's and support of data analysis. Data analysis support for OGO–I and II were terminated early in fiscal year 1968 at the end of the planned support period and will be terminated for OGO–III in June 1968. Funding for analysis of data beyond these periods is being provided under the data analysis line item in the budget.

Funds in fiscal year 1969 will provide for launch of OGO–F, operational support for data acquisition, and data analysis support for OGO–IV, OGO–E, and OGO–F.

Fiscal year 1966 and prior funding for the OGO project including launch vehicles was $198,341,000. Fiscal year 1970 and later funding requirements are estimated to be $5,300,000.

PIONEER

	1967	1968	1969
Spacecraft and support, A-E	$2,479,000	$3,913,000	$3,158,000
Experiments, A-E	4,421,000	3,087,000	1,242,000
Spacecraft experiments and support, F. & G			1,600,000
Subtotal, Pioneer	6,900,000	7,000,000	6,000,000
Delta (launch vehicle procurement program)	(1,217,000)	(2,834,000)	(650,000)
Total (including launch vehicles)	(8,117,000)	(9,834,000)	(6,650,000)

The objectives of the Pioneer program are to investigate the interplanetary environment and the propagation of solar and galactic phenomena through this medium. Correlation with similar measurements made near the earth by satellites is required to attain the full objective.

The current series of Pioneer spacecraft weigh about 140 pounds and are launched with the thrust-augmented improved Delta. The first two of these, Pioneer VI and Pioneer VII were launched successfully in December 1965 and August 1966, respectively. Both continue to operate successfully. Pioneer VIII, successfully launched on December 13, 1967, appears to be operating nominally. Two additional Pioneer spacecraft are scheduled for missions approaching as close to the sun as 0.7 AU and going away as far as 1.2 AU (One AU is equal to the mean earth-to-sun distance, 92,900,000 miles.)

The Pioneer experiments are designed to measure the solar wind flow, magnetic fields, and the electron density in space; and to observe the energy spectra,

fluxes, and direction of solar and galactic cosmic rays. The performance of these experiments on the three widely separated satellites in deep space provides some very unique and valuable scientific opportunities in this program. The combination of measurements from the three widely separated scientific payloads will enable us to detect and track solar storms. This information provides advance warning of radiation dangers for our spacecraft and variations in the protective magnetic envelope of the earth which affects the long-range radio communications of the world. The orbit of Pioneer VIII will allow measurements of the earth's magnetic tail at 2 million miles. Measurement of the tail's thickness and other properties at this distance will help determine the exact state of the earth's protective magnetic envelope.

We are proposing to initiate the development of two additional spacecraft, Pioneer F and Pioneer G, to be launched into trajectories that will carry them out beyond the orbit of Mars, through the asteroid belt, and toward the orbit of Jupiter. With this type of trajectory, we should be able to obtain information on the hazardous region of the asteroid belt and gain knowledge of the gradient of the sun's influence on interplanetary space and the penetration of galactic cosmic radiation into the solar system. The new trajectory will require modifications to be incorporated in the spacecraft to compensate for the lessening of solar radiation as a power source and the more demanding communications and thermal conditions. New experiment instrumentation will also be required. These spacecraft will be launched in the 1973–1974 time period by Centaur launch vehicles. The change from the Delta launch vehicles used on earlier missions is required to provide the velocity for this new trajectory.

Measurement of the Pioneer project has been the responsibility of Ames Research Center, Thompson Ramo Wooldridge Systems, Inc., is the prime spacecraft contractor. Tracking and data acquisition systems management is the responsibility of the Jet Propulsion Laboratory, and Goddard Space Flight Center has responsibility for Delta launch vehicle systems management. Lewis Research Center will be responsible for Centaur launch vehicle systems management.

Funds in fiscal year 1966 provided for testing launch, and postlaunch operations for Pioneer VI, and the assembly and testing of Pioneer VII. Funds for fiscal year 1967 cover the launch of Pioneer VII and postlaunch operations for Pioneer VI and Pioneer VII, and the initiation of the subsystems for the third, fourth, and fifth spacecraft. Fiscal year 1968 funds continue to support the postlaunch operations for Pioneer VI and Pioneer VII, final testing and launch of Pioneer VIII, and initial integration and testing for the fourth spacecraft.

Fiscal year 1969 funds will be used to provide for the preparation of Pioneer D and Pioneer E for launch of Pioneer D in 1968 and Pioneer E in 1969, operational support for the three Pioneer spacecraft and support of data analysis.

Fiscal year 1966 and prior funding, including launch vehicles, was $56,911,000. Fiscal year 1970 and later funding required to complete the seven flight missions, including launch vehicles, is estimated to be $64,300,000.

EXPLORERS

	1967	1968	1969
Geophysical and interplanetary explorers	$12,571,000	$11,800,000	$17,400,000
Astronomy explorers	5,653,000	5,500,000	5,800,000
Subtotal, explorers	18,224,000	17,300,000	23,200,000
Scout (launch vehicle procurement program)	(4,500,000)	(1,850,000)	(5,800,000)
Delta (launch vehicle procurement program)	(13,317,000)	(12,466,000)	(12,600,000)
Total (including launch vehicles)	(36,041,000)	(31,616,000)	(41,600,000)

The Explorer satellites are the smallest of NASA's scientific spacecraft and are normally launched on Scout and Delta vehicles.

The Explorers are specifically designed and instrumented to provide for specialized scientific investigations and are flown in orbits especially selected for these investigations. The Explorer class spacecraft and their experiments are developed by NASA installations, universities, industry, and cooperating foreign countries. They are used for investigations of the earth's atmosphere, ionosphere, and magnetosphere; exploration of the magnetospheric boundary region and inter-

planetary space; and astronomical observations of the sun and other celestial objects.

Explorer class satellites launched successfully to date include: three air density explorers (12-foot balloons), and two atmosphere explorers (measuring temperature, density, and composition by instrumentation). Foreign satellites launched cooperatively were two Italian San Marco Satellites, and one Ariel Satellite (United Kingdom). Under development in Italy is a third satellite which will carry Italian and U.S. experiments to measure atmospheric density and composition in equatorial regions. We are proposing to initiate development of two more atmosphere explorers in fiscal year 1969 to be flown in 1971 and 1972 to make studies in the region of the atmosphere between 75 and 150 miles which has not previously been explored except limited sampling by sounding rockets.

Four U.S. Explorers have been successfully launched with a primary mission to explore the ionosphere: one topside sounder, one beacon, and two direct measurements satellites. An additional five satellites were launched in cooperative efforts with Canada, the United Kingdom, and France. The cooperative program with Canada is continuing with three more satellites scheduled for launch over the next 4 years.

Eleven Explorer class satellites were launched between 1958 and 1964 to study the radiation belt and related phenomena and to monitor the radiation caused by high altitude nuclear tests. All of these were U.S. spacecraft. Six satellites under development by two universities in the United States and by the European Space Research Organization and Germany will be launched during 1968 and 1969 to perform specialized studies of particle radiation and its relationship to the atmosphere, ionosphere, airglow, and the aurora.

A cooperative effort with Germany is planned to launch a probe into the magnetosphere to release barium ions for study of electrostatic fields.

NASA had planned to launch a series of small scientific satellites beginning in 1969 to conduct interdisciplinary studies aimed at a better understanding of magnetic storms, the ring current and low energy charged particles in the magnetosphere. Because of manpower limitations at the Goddard Space Flight Center and general budgetary reductions, it has been necessary to defer first launch of this series until 1970.

In 1961 Explorer X was launched out of the earth's magnetosphere and into interplanetary space, returning to orbit the earth before its demise. It was not until 1963, however, that we were able to mount a continuing exploration of boundary region of the earth's magnetosphere with the first IMP Explorer. Six of these IMP Explorers have been launched and four more are planned during the period 1968 to 1972. We are progressively increasing the experiment capacity and data rate on these satellites because they will have to assume the role of an interdisciplinary satellite with phaseout of the OGO series. We have found it necessary to reschedule the IMP series because of manpower limitations and general budget restrictions, but the outstanding reliability of the IMP spacecraft launched to date to date may make it possible to continue coverage of magnetosphere boundary phenomena.

Also deferred until 1970 is the first launch of a series of five Sunblazer spacecraft designed to orbit the sun. These small spacecraft, to be launched by a five-stage Scout vehicle, will transmit signals from beyond the sun through the solar corona to earth for studies of variations in the solar corona, magnetic field, and solar particle fluxes. Other possible missions for these spacecraft include interplanetary field and plasma studies, solar neutron studies, and comet simulation studies.

In astronomy, Explorer satellites are devoted primarily to nonoptical missions of a survey nature, X-ray, gamma ray, and low frequency radio astronomy. The Radio Astronomy Explorer is designed to measure the direction and intensity of celestial radio signals as a function of frequency and time. Two missions are presently scheduled, the first in 1968. The spacecraft has a large antenna capable of being deployed in orbit to form a large "X" measuring 1,500 feet tip-to-tip. It will be launched by a Delta vehicle.

A Scout launched astronomy Explorer called the Small Astronomy Satellite is scheduled for two missions beginning in 1970. The objective of the first of these is the detection and measurement of X-rays over the entire celestial sphere. This satellite should give us a map of X-ray sources which are as much as 1,000 times weaker than the strongest X-ray source so far detected.

The second Small Astronomy Satellite mission will continue the search for diffuse or point sources of high energy cosmic gamma rays and to map any sources that are found. Relatively short lived rocket and balloon experiments conducted so far have failed to detect any gamma ray sources. The gamma ray telescope on this mission is an enlarged version of an instrument called a digitized spark chamber flown successively on balloons. This detector will be capable of detecting any sources which are 100 times fainter than the existing limits set by sounding rockets and balloon experiments.

The Naval Research Laboratory is preparing another small Explorer for launch in 1968 to continue a program carried out previously with Explorer XXX of monitoring of the sun's energetic X-ray emissions. The satellite funded by the Navy will be launched by a NASA-funded Scout vehicle.

Funding prior to fiscal year 1967 provided for the development and successful launch of U.S. Explorers through number 33, and for cooperative efforts with other countries to launch six satellites. Major development work was also accomplished on ten other U.S. Explorers, and six other cooperative missions.

In fiscal year 1967, work was initiated on the series of small scientific satellites and the Small Astronomy Satellite, and the IMP Explorers program was extended by three more missions. A small amount of support was provided for our cooperative effort with Germany.

In fiscal year 1968, no new U.S. Explorers are being started because of limitations on manpower and funding. Work on a number of spacecraft is being deferred.

In fiscal year 1969, work will be initiated on two new atmosphere Explorers and efforts will be expanded on the IMP, small scientific satellites, and Small Astronomy Satellite Explorers. The expansion of the Explorer program will only partly offset the phase-out of the OGO program. The Sunblazer, on which we had planned to start full-scale development efforts in fiscal year 1968 will be held in a Supporting Research and Technology status until fiscal year 1969.

Post fiscal year 1969 funding for all of the Explorers initiated through fiscal year 1969 will involve about $87,895,000, including launch vehicles.

SOUNDING ROCKETS

	1967	1968	1969
Experiments	$6,699,000	$7,430,000	$7,891,000
Rocket development	1,375,000	1,350,000	1,669,000
Attitude control systems	3,962,000	3,060,000	3,648,000
Engineering support	440,000	750,000	640,000
Test and evaluation	275,000	290,000	325,000
Ground instrumentation	3,178,000	3,220,000	3,581,000
Rocket procurement	4,071,000	3,900,000	4,246,000
Total	20,000,000	20,000,000	22,000,000

Sounding rockets have proven to be a most effective means of making scientifically valuable studies of the upper atmosphere at altitudes between 40 and 175 miles. These rockets are relatively small and inexpensive vehicles, capable of carrying wide varieties of instrumentation for the study of the atmosphere, ionosphere, energetic particles, the stars, and the sun. The relatively low cost and short leadtimes of sounding rockets make them extremely useful for carrying out exploratory experiments and testing new instruments.

Sounding rockets have been used to measure atmospheric density and temperature; to analyze the various gases present in the upper atmosphere, and responses of the atmosphere to varying solar activity. Chemicals released from sounding rockets for wind and temperature measurements launched from various sites all over the world have improved our knowledge about the dynamics of the ionospheric region and the nature of the earth's magnetic field. Recoverable sounding rocket payloads have been used to collect extraterrestrial dust originating in meteor streams, comets, and asteroids. Noctilucent clouds formed by the condensation of ice about this dust have been probed by flights from Sweden and Ft. Churchill, Canada; interplanetary dust has been sampled by rockets over White Sands, New Mexico.

The aurora and airglow have been investigated by rocket probes containing spectrophotometers, filter photometers, and particle detectors.

Ionospheric experiments carried out with sounding rockets have been extremely valuable both for scientific investigations of the physics of the ionosphere and for

calibrating instrumentation on satellites already in orbit by simultaneously measuring the same region of the ionosphere. Instruments have been developed to measure electron concentrations and temperature, electromagnetic waves, ionic and neutral mass spectra, magnetic fields, and E-region currents.

Sounding rockets are now being effectively utilized for astronomical observations of the sun and the stars in the X-ray and ultraviolet regions of the spectrum. These experiments were made possible by the development of improved attitude control systems.

Responsibility for sounding rocket support activities has been assigned to the Goddard Space Flight Center. NASA Headquarters has responsibility for experiments developed by researchers at universities, in industry, at other agencies, and in other countries.

One hundred and five physics and astronomy sounding rockets of the Nike Cajun/Apache/Tomahawk, Aerobee, and Javelin types were launched during 1967 from sites in the United States, Canada, Brazil, India, Sweden, and Norway. Included in these flights were: (a) tests of instruments being developed for the German Research, Injun V, and Alouette satellites using Javelin rockets; (b) ozone and nitric oxide experiments that complement experiments on OGO–D, using Arcas and Nike Apache rockets coordinated with flybys of the satellite; (c) solar UV experiments that complement similar experiments on OSO–C using an Aerobee 150 coordinated with a flyby of the satellite; (d) hydrogen and Lyman Alphas experiments that complement similar experiments on Mariner V using an Aerobee 150 rocket coordinated with the spacecraft flyby of Venus on October 19, 1967; (e) a "gravity preference" experiment using mice flown on an Aerobee 150 in support of the Bioscience program; (f) a series of magnetic and electric field coordinated experiments utilizing instruments and chemical releases under Nike Tomahawk rockets; and (g) the first experiments utilizing the Scat and Strap III pointing controls with pointing accuracies on the order of one arc second using Aerobee 150 rockets.

NASA plans to continue the sounding rocket flight program in 1968 at the current level of roughly 100 flights per year. Major flights planned for 1968 include: (*a*) an experiment to create an artificial aurora with an "electrogun" using an Aerobee 350 rocket; (*b*) auroral spectra and VLF experiments to test instruments being developed for the Injun V, Isis, Owl, and ATS satellites using Javelin rockets; (*c*) continued experiments of the "gravity preference" of mice using Aerobee 150 rockets; (*d*) auroral spectra experiments to test instruments being developed for the Isis A and B, and Alouette II satellites using Nike Apache and Nike Tomahawk rockets; and (*e*) a series of experiments to study the aurora using Aerobee 150, Javelin, and Nike Tomahawk rockets coordinated with flybys of the OGO–D satellite and the auroral expedition 990 aircraft.

During fiscal year 1969, we will begin to exploit the capability we developed over the last few years. The improved attitude control systems and larger vehicles are enabling us to incorporate heavier payloads of multiple and complementary experiments. By use of the more complex payloads, we are getting more scientific data return for the resources expended. Experiments in planetary atmospheres, energetic particles and fields, galactic and radio astronomy, ionospheric physics, and solar physics are being continued with emphasis on stellar and solar, X-ray, and UV astronomy.

DATA ANALYSIS

	1967	1968	1969
National Space Science Data Center	$350,000	$703,000	$1,162,000
Research tasks:			
Particles and fields	957,000	1,147,000	2,253,000
Ionospheric physics	366,000	765,000	1,010,000
Solar physics	32,000	65,000	140,000
Astronomy/astrophysics		95,000	195,000
Meteorites/micrometeorites	30,000	25,000	40,000
Interdisciplinary		100,000	200,000
Total	$1,735,000	$2,900,000	$5,000,000

The National Space Science Data Center, located at the Goddard Space Flight Center, provides for the collection, cataloging, storage, and dissemination of reduced data from space science flight experiments. The data are made

available to those interested in further research. Support is provided for research involving the correlation of data from several separate investigations and also for research not included in the initial investigations. Proposals for research are competitively evaluated and support is provided for those efforts which can be expected to contribute most to the total advancement of knowledge. The support given to particles and fields and ionospheric physics reflects the fact that most of the experiments flown to date are from these disciplines. However, the amounts for solar physics and astronomy/astrophysics are increasing and should continue to do so with the availability of data from OSO and the forthcoming OAO and Apollo telescope mount.

In order to increase the holdings of the National Space Science Data Center, resources are also being devoted to completing data reduction and prime analysis, and acquiring data records for experiments which predate the establishment of this facility. Elimination of this backlog accounts for most of the increase in fiscal year 1968 and fiscal year 1969. Due to financial restraints, fiscal year 1968 funding is extremely limited, but the fiscal year 1969 level more adequately supports this effort. The funding for the National Space Science Data Center reflects the expansion of operations of the Data Center as the pace of collecting data is accelerated.

ELIMINATION OF DUPLICATION

Mr. EVINS. Do you know anything about the extended division of authority between DOD and NASA in this field of physics and astronomy?

Dr. NAUGLE. We regularly meet and compare our programs and eliminate any satellite projects or any work which is duplicatory.

Mr. EVINS. Dr. Naugle, tell us about some that you have eliminated. Could you name one?

Dr. NAUGLE. I will place this in the record.

(The information requested is as follows:)

A major medium for coordinating the effort between NASA and DOD is the Aeronautics and Astronautics Coordinating Board (AACB). One of the bodies reporting to the AACB is the Unmanned Spacecraft Panel (USP). This panel is charged by AACB to review, on an annual basis, the space science program of both agencies. The action to coordinate this effort is usually initiated early in the calendar year preceding the beginning of the fiscal year for which the programs are to be coordinated. A major purpose of this coordination is to identify and eliminate any unnecessary duplication. That such an effort succeeds is evidenced by the attached memorandum by which the report describing the fiscal year 1967 space science program coordination effort was formally forwarded by the Unmanned Spacecraft Panel to the AACB. You will note on the second page of that memorandum a listing of three DOD experiments that were identified as being similar to experiments being conducted by NASA and therefore the former were cancelled. These experiments are:

Hydrogen radiation.
Vacuum UV surveillance.
Cesium contact I on microthruster.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., November 15, 1966.

Memorandum for: The Co-Chairmen, Aeronautics and Astronautics Coordinating Board.

Subject: Coordination of the DOD–NASA fiscal year 1967 space science program.

In accordance with the procedure approved by the Aeronautics and Astronautics Coordinating Board, the review and coordination of the fiscal year 1967 space program of the DOD and NASA were carried out by a NASA–DOD working group under the auspices of the Unmanned Spacecraft Panel.

Some of the highlights of the review are as follows:

The estimated fiscal year 1967 funding for the DOD science program is $8.2 million; funding for the NASA science program is $292 million;

Almost all of the NASA science missions will be launched as primary payloads. Less than half of the DOD scientific experiments will be launched as primary payloads;

The DOD program continues to emphasize investigations of the near-earth environment which are or specific interest to the national defense. The NASA program includes near-earth, lunar, planetary and interplanetary missions;

Three satellite programs are being supported jointly by NASA and the Navy. These are the Solrad, Injun and Aurora satellite programs. A fourth satellite program for the exploration of magnetosphere boundaries is under discussion;

As a result of the coordination, a number of experiments were canceled because of their similarity. These are:

Hydrogen radiation (DOD).
Vacuum UV surveillance (DOD).
Cesium contact ion microthruster (DOD).

The Unmanned Spacecraft Panel concluded that the programs of each agency were satisfactorily reviewed to provide visibility and to preclude undesirable overlaps. The panel accepted the report as amended at its meeting on October 14, 1966, for submission to the Board.

The report and amendment of the working group are attached for your use.

ROBERT F. GARBARINI,
Chairman, Unmanned Spacecraft Panel.
JOHN KIRK,
Vice Chairman, Unmanned Spacecraft Panel.

LUNAR AND PLANETARY PROGRAM

Mr. EVINS. Let's take a look at the lunar and planetary explorations program in your summary. The lunar and planetary exploration program carries out the scientific exploration of the solar system by means of Earth-based research and automated spacecraft. The immediate objectives are the exploration of the Moon, the planets Venus, Mars, and Mercury, and the intervening interplanetary space.

You are going to do all this immediately, but the long-range objectives include eventual exploration of the outer planets and their moons, comets, asteroids, and the interplanetary medium en route to these bodies.

Then you say achievement of these objectives will provide the data with which we can better understand the origin of life. Isn't this a little far out?

Dr. NAUGLE. I don't think it is.

Mr. EVINS. I think it is a little far out. I will put it on the record. It is a little far out.

SEARCH FOR LIVING SYSTEMS

Dr. NAUGLE. Mr. Chairman, let me clarify that point. We are talking about experiments to look for living systems on other planets. If we find those, this will provide a marked increase in our understanding of the nature of life on Earth as we know it.

Mr. EVINS. All these things are good to find out, Doctor, but you say the immediate objective is to find out about the Moon, Mars, Venus, and Mercury. You have a pretty big order when you do that.

Dr. NAUGLE. That is right.

Mr. EVINS. You'd better get these others accomplished before you take on the other.

Dr. NAUGLE. Mr. Chairman, we are concentrating on Mars and Venus in the planetary program.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place pages RD5–1 through RD5–13 in the record.

(The documents follows:)

OFFICE OF SPACE SCIENCE AND APPLICATIONS—LUNAR AND PLANETARY EXPLORATION PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the lunar and planetary exploration program is the scientific exploration of our solar system utilizing automated spacecraft and Earth-based research. Immediate objectives include the exploration of the Moon, the planets Mars, Venus, and Mercury, and the intervening interplanetary space. The fulfillment of long range objectives will see the eventual exploration of the outer planets and their moons. comets, asteroids, and the corresponding planetary and interplanetary deep space environment. The ultimate achievement of these objectives will provide data to better explain the origin, history, and mechanisms of development of our solar system and may provide evidence of the existence of forms of life elsewhere in the solar system.

The lunar exploration program has already played a major role in the scientific understanding of the Moon and preparing for the first manned exploration of the Moon by providing valuable data from three types of missions. The first, Ranger, has yielded over 17,000 photographs providing a better understanding of the nature and surface of the Moon. The second, Lunar Orbiter, provided detailed photography of the Moon which significantly contributed to the selection and certification of landing sites for the Apollo manned lunar landing missions. In addition, the Lunar Orbiter has provided valuable scientific data by photographing the entire lunar surface and thus contributing to the fundamental knowledge of lunar, surface topography and geology, provided the first photographs of the Earth from the immediate vicinity of the Moon, obtained data on the lunar micrometeoroid flux and radiation intensity near the Moon, and contributed to the improvement in the definition of the lunar gravitational field. The Lunar Orbiter project has demonstrated the capability to develop complex technology required to place automated spacecraft into precise orbits about another body of the solar system. This technology will have direct application to planetary exploration. With the completion of the last Lunar Orbiter flight in fiscal year 1968, the project has conducted five successful missions over a 13-month period. No funds are being requested for this project in the fiscal year 1969 budget.

The Surveyor project, also completed in fiscal year 1968, has demonstrated the capability to develop complex automated spacecraft to soft land on another planet. To date, five successful missions have been achieved. The final Surveyor mission was conducted early in calendar year 1968. No funds are being requested for this project in fiscal year 1969. The Surveyor missions have produced several thousand closeup photographs of lunar surface detail, data on lunar surface bearing strength required for Apollo, and have performed the first on-site chemical analysis at various locations on the lunar surface. Part of the fiscal year 1969 funds requested under the data analysis project are for Surveyor and Lunar Orbiter. These funds will provide for the continuation of analysis and reporting on the scientific and engineering data obtained from these successful missions to the Moon. The funds will support the Surveyor principal investigators and members of the advisory teams and working groups in the fields of lunar geology, chemistry, mechanical properties, soil mechanics and electromagnetic phenomena.

The planetary exploration program has experienced a high degree of success and increased our knowledge about the planets Mars and Venus. The Mariner II mission in 1962, provided new data on the physical characteristics of the Venusian atmosphere. The Mariner IV mission to Mars in 1965, provided the first closeup photography of the planet and the first data on its low density atmosphere. Mariner V, launched in June 1967, flew by Venus on October 19, 1967, and made determinations of mass and ephemeris, measured the solar wind interaction with the planet, determined the magnetic field of Venus to be less

than one three-hundredths of that of the Earth and indicated no radiation belts around the planet. Preliminary analysis of the data indicates the atmospheric pressure is 5 to 7 atmospheres at a temperature of 330° to 350° F. about 24 miles above the planet's surface. Should Mariner V survive its close approach to the Sun in January 1968, Earth-based antennas will reacquire the spacecraft in an attempt to obtain additional data in August or September 1968.

The next step in the exploration of the planets will be to gain further information about the planet Mars. In 1969, a Mariner mission will be launched to fly by the planet to obtain high resolution topographic information about the Martian surface, provide atmospheric profile measurements by means of occultation experiments and perform measurements of the atmospheric constituents including polyatomic molecules, atomic hydrogen, oxygen, and nitrogen; ionic molecular nitrogen and carbon monoxide; and molecular nitrogen, nitric oxide, carbon monoxide, and cyanogen with infrared and ultraviolet instruments. The flyby distance will be about one-third that achieved by Mariner IV in 1965. The 1971 Mariner-Mars mission will perform similar experiments in orbit rather than in a flyby mode. The orbital mode of operation will enable us to gain detailed information about the dynamic characteristics of the planet and provide continuous measurements of seasonal and diurnal variations. Voyager, which was being developed to provide Saturn V launched orbiting and landing missions to Mars in 1973, has been terminated upon the completion of phase B closeout activities. No funds are being requested for this project in the fiscal year 1969 budget. The 1973 Mars mission with a Titan Mars 1973 orbiter and probe will extend the scientific measurements in orbit and provide for direct measurements of the atmospheric composition, temperature, pressure, and density profile. The Titan Mars 1973 mission will provide the first correlation of remote measurements from orbit with direct entry measurements from a probe. This program will establish the basic steps for more detailed surface exploration of the planet Mars and an orbiter baseline configuration for future planetary exploration.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology/advanced studies	$22,350,000	$19,800,000	$30,000,000
Advanced planetary mission technology		12,000,000	6,700,000
Data analysis		600,000	2,600,000
Surveyor	79,942,000	35,600,000	
Lunar orbiter	26,000,000	9,500,000	
Mariner IV and V	13,058,000	3,800,000	
Mariner Mars 1969	30,130,000	59,200,000	30,000,000
Mariner Mars 1971			18,000,000
Titan Mars 1973			20,000,000
Voyager	12,670,000	1,000,000	
Total	184,150,000	141,500,000	107,300,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Kennedy Space Center	$159,000	$90,000	$100,000
Manned Spacecraft Center	65,000	650,000	1,100,000
Marshall Space Flight Center	1,411,000	385,000	100,000
Goddard Space Flight Center	855,000	1,292,000	2,000,000
Jet Propulsion Laboratory	141,885,000	113,479,000	62,300,000
Ames Research Center	620,000	1,098,000	1,700,000
Electronics Research Center	40,000	75,000	100,000
Langley Research Center	28,625,000	12,700,000	22,000,000
NASA headquarters	10,490,000	11,731,000	17,900,000

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY/ADVANCED STUDIES

	1967	1968	1969
Lunar science, advanced technical development, and advanced studies	$4,500,000	$4,000,000	$14,200,000
Planetary science, advanced technical development and advanced studies	17,850,000	15,800,000	15,800,000
Total	22,350,000	19,800,000	30,000,000

The supporting research and technology/advanced studies program provides support to the flight mission by developing science experiments and engineering capabilities, and by studies defining the objectives and requirements of various flight mission possibilities.

The activities in the science program include the development of new and improved flight experiments, the advancement of the state of knowledge of the moon, planets, and the earth's upper atmosphere by theoretical studies, the determination of essential data by laboratory, astronomical, balloon and sounding rocket investigations, and data analysis and interpretation of the results from flight experiments. Research emphasis is directed at the characteristics of the earth's upper atmosphere and the atmospheres, surface features, and solid body properties of the moon and the planets. Laboratory research includes investigations into the physical and chemical nature and behavior of likely constituents of planetary atmospheres and the solid material of the moon and planets, and the reactions that occur through the influence of external forces and effects such as solar radiation, cosmic rays and meteoroids. Other investigations utilize optical and radio techniques of astronomy to obtain information about the moon and the planets from balloons, sounding rockets, and ground-based observatories. During fiscal year 1969, it is expected that construction will be completed on the 105-inch telescope at the University of Texas and the 84-inch telescope at the University of Hawaii.

The most important research areas continue to be the nature of the atmospheres of Mars and Venus, and the characteristics of the surfaces of the Moon and Mars. The data obtained from these ground based activities when combined with flight results (Mariner II, Mariner IV, Mariner V, lunar Orbiter I through V, and Surveyor missions) continue to advance our knowledge through theoretical and modeling studies. The better understanding of the moon and planets obtained in this way is paving the way for manned landings on the Moon and automated probes for descent through the atmospheres of Venus and Mars and landing on the planets.

The objectives of the advanced technical development program are to advance technology for application in new and improved spacecraft hardware and provide better alternative designs that will successfully allow the conduct of proposed flight missions to the moon and planets. The success of these missions will be dependent upon the development of equipment which can operate reliably after long term exposure in deep space. For flight missions planned to the planets, the spacecraft hardware developed must also operate successfully after being fumigated by gas and sterilized with heat. During fiscal year 1968, the program covered a number of phases of spacecraft advanced development including the design and development of telecommunication and data automation concepts and techniques, the investigation of techniques for sterilization of hardware, the development of landing and capsule system technology, and the improvement of component reliability and lifetime. In fiscal year 1969 funds will be used to continue the current efforts, to support possible future Mars missions, and to start advanced development of critical technologies required for missions to Mercury and other planets.

The advanced studies program plays an essential role in developing the plans for future lunar and planetary missions. The identification and evaluation of potential missions is a continuing process which takes into account new information about the moon and the planets, advances made in spacecraft technology, and improved booster capabilities. In fiscal year 1968, funds were used (1) to conduct a study of a survivable Venus probe based on design studies of nonsurvivable probe concepts: (2) to evaluate possible Mariner missions for the early 1970 time period; and (3) to investigate the use of solar electric propulsion for missions to Jupiter and beyond. A combined Venus/Mercury mission using nominal on-board propulsion systems was studied. During fiscal year 1969 funds will be used to continue the survey of missions in the distant future and definition of a Jupiter atmospheric probe and an analysis of rendezvous missions to the moon and planets and their associated technology requirements. Primary emphasis will be placed on studies of outer planet flyby missions and orbiter missions to Jupiter. In addition, preliminary studies of automated Mars surface sample return missions are planned. Other studies will include the definition of a Jupiter atmospheric probe and an analysis of rendezvous missions to comets and asteroids.

During fiscal year 1969, supporting research and technology efforts directed toward the planets will continue at the same level as fiscal year 1968. Efforts directed towards optimizing manned exploration of the moon will be increased.

The opportunity presented by Apollo to explore the moon is a major challenge to the scientific community. Large payloads can be delivered into lunar orbit and onto the lunar surface; astronaut stay time will be gradually increased; mobility systems will be introduced, and, above all, man will be there to manipulate the equipment and observe and report on the results. Our efforts toward optimizing this exploration and fully utilizing the capability of the system must be increased. New exploration methods must be developed, and existing earth exploration methods must be modified to fit the lunar parameters. Instruments must then be designed and breadboards constructed. A major contribution to this effort will be increased emphasis on research based on the scientific data from the Surveyor and Lunar Orbiter spacecraft. This research will significantly contribute to our decisions on what we should look for on the surface and in the interior of the moon, how we should look for it, and where we should concentrate our efforts. Continued refinement of existing mission plans must keep pace with these activities.

The initiation of the above activities are essential if we hope to take full advantage of the Apollo missions in the early 1970's. The accomplishment of these goals in this time span will necessitate increasing the activities of scientists and groups of scientists currently in the program, as well as supporting new groups that are currently anxious to participate.

ADVANCED PLANETARY MISSIONS TECHNOLOGY

	1967	1968	1969
Orbiters and fly-bys		$6,000,000	$1,500,000
Probes and landers		4,000,000	2,600,000
Surface laboratories		2,000,000	2,600,000
Total		12,000,000	6,700,000

The advanced planetary missions technology program commenced in fiscal year 1968 in view of the conclusion of the Mariner V, Lunar Orbiter, and Surveyor programs and the deferral of Voyager after the phase B completion. These programs represent an estimated experience of about 20,000 to 30,000 man years. The advanced planetary missions technology effort is maintaining a nucleus of the scientific, technical, and management competence made available by the completion of these successful programs to conduct the necessary mission design studies to shorten lead time requirements for future missions, to accelerate specific technology tasks in advanced subsystem development essential for executing missions in the early 1970's, and to advance scientific instrumentation development associated with probes and landers.

The advanced planetary missions technology program has been divided into three major types of missions: Orbiters and flybys, probes and landers, and surface laboratories. Within each mission type there are three major areas of activities: Mission design studies, advanced subsystem research and development, and science definition and instrument development.

The mission design studies started in fiscal year 1968, and to be continued in fiscal year 1969, are directed toward the mission opportunities that exist during the early 1970's. These missions include various possible Venus missions in 1972, missions to Venus considering the deployment of a buoyant station, a Venus swingby to Mercury in 1973 and soft landing capsules and surface laboratory missions to Mar in the mid 1970's.

For each potential mission, trade-off studies are performed between various possible combinations of mission objectives, applicability and use of information and equipment from earlier missions, modification and reuse of remaining spare hardware from previous missions, and contribution to follow-on missions. To determine the energy requirements and compatibility of various classes of payloads with available launch vehicle capability, trajectory studies are conducted. These studies are combined to evaluate the mission mode, size, weight, and trajectories so that efficient, scientifically desirable, and effective missions can be defined. After defining desirable mission concepts, studies are performed to

provide conceptual designs of systems and subsystems, spacecraft/capsule integration, launch vehicle integration, program and test planning, and sterilization planning.

From these mission design studies, a foundation is established for the initiation of planetary flight projects on a shorter lead time than is normally required. In addition, a sound basis is formulated for the selection of missions that are compatible with schedule and resource limitations as well as scientific attractiveness. By performing this design study we are afforded the flexibility to implement existing mission options at a later date.

The advanced subsystem research and development activity initiated in fiscal year 1968 was based on an evaluation of the critical technology requirements for the three mission classes and the lead times involved in developing these technologies. In this way, subsystem technology would be developed to the stage of demonstrated engineering feasibility for specific classes of missions. This effort is directly applicable to the specific 1971 and 1973 Mars missions included in the fiscal year 1969 budget request and will be supported by the flight projects when they are approved. The funds requested in 1969 will continue work in heat shield development, analysis of radiating boundary layers and in entry vehicle development. These funds will also provide for continued work in telecommunications, data handling and processing, propulsion, entry aero-dynamics, guidance and control, structures and mechanics, sterilization and ground support equipment. Significant advances are required in transmitted power subsystems and in higher efficiency coding and modulation techniques to enable planetary orbiters to effectively transmit photographic data over long distances. Advanced investigations are required in parachute dynamics, in order to develop large parachutes deployable at high Mach numbers in a low density atmosphere.

The third major activity in the advanced planetary mission technology program is concerned with the definition of science objectives and rationale for the various classes of missions, and with the advance development of instrumentation to be carried on these missions. The fiscal year 1969 scientific instrumentation effort would provide for the definition of scientific experiments and the fabrication of laboratory breadboard models to verify instrument performance for missions to Mars, Venus, and Mercury. The surface laboratory will require the development of integrated science instrumentation that can be sterilized and function as an interrelated set of experiments. To define this integrated laboratory effectively, science teams will be organized to work with design engineers in the early breadboard stage so that significant problem areas will be identified early. In order to achieve an operational surface laboratory in the mid-1970's, work will be done on advance instrumentation and techniques for sample processing, microchemical analysis, and imaging discrimination.

The exploration of Venus will require the same effort in terms of instrumentation and experiment design. Data from the successful Mariner V and Venus IV will be interpreted to provide information for the definition of missions and experiments to be flown later.

DATA ANALYSIS

	1967	1968	1969
Surveyor			$1,200,000
Lunar Orbiter			800,000
Mariner		$600,000	600,000
Total		600,000	2,600,000

Data analysis is shown as a separate project in the lunar and planetary program this year, in view of the fact that the Lunar Orbiter, Surveyor, and Mariner IV and V projects are completed but the analysis of data gathered is not yet fully accomplished. The funds shown in fiscal year 1968 were included in the Mariner project in the fiscal year 1968 budget and are being used for Mariner data analysis.

The Lunar Orbiter project has photographed the entire moon, providing topographic and geologic information in great quantity and detail. The Surveyor project has accomplished soft landings at selected sites on the moon. By television photography, manipulation of the surface material, chemical analysis and magnetic tests, Surveyor spacecraft have provided valuable information about

the lunar surface material, its bearing strength, texture, cohesive properties, and chemical composition. Lunar Orbiter data have provided for selection of eight candidate Apollo landing sites. Four of these site areas were investigated by Surveyor. Fiscal year 1968 marks the end of these successful programs. A portion of the funds requested in fiscal year 1969 for data analysis will be used to continue the analysis of and reporting of the vast amount of scientific and engineering data obtained from these successful programs. The funds will support the work of the Surveyor and Lunar Orbiter principal investigators, members of the Surveyor science evaluation and advisory team and working groups in the fields of lunar geology, topography, cartography, chemistry, mechanical properties, soil mechanics, and electromagnetic properties.

Mariner missions have also provided a wealth of data about the planets Mars and Venus, as well as the interplanetary medium. Mariner II acquired interplanetary and planetary data on a flyby mission to Venus in 1962. Mariner IV, launched in November 1964, flew past Mars in July 1965. It acquired data on the interplanetary medium, the atmosphere of the planet and transmitted to earth 22 pictures of the surface of the planet. After completion of the Mars mission, Mariner IV continued on its trajectory in orbit about the sun. In 1966–67 it came within range of the earth-based deep space network antennas and was determined to be in good operating condition. It continued to function normally throughout the 2-year period until the on-board attitude-control gas supply was finally exhausted in December 1967.

Mariner V, launched in June 1967, acquired data on the interplanetary medium and planetary atmosphere of Venus which improved and augmented significantly the data acquired 5 years earlier by Mariner II. Although the analysis of Mariner V data is still in process, preliminary findings indicate a planetary surface of high temperature under very high atmospheric pressure. Carbon dioxide is a principle constituent of the Venus lower atmosphere. The planet is enveloped in a sphere of hydrogen analogous to that of earth. Neither a magnetic field nor trapped energetic particles were detected near the planet.

In the event that Mariner V survives its close approach to the sun in January 1968, its trajectory will bring it within range of earth-based antennas again in August or September 1968, and provide an opportunity to acquire additional data during such a period of reacquisition. Funds are budgeted in fiscal year 1969 to support this activity.

MARINER

	1967	1968	1969
Mariner-Mars 1964	$200,000		
Mariner IV	800,000		
Mariner V	12,058,000	3,800,000	
Mariner-Mars 1969	30,130,000	59,200,000	$30,000,000
Mariner-Mars 1971			18,000,000
Total spacecraft and support	43,188,000	63,000,000	48,000,000
Atlas Agena (launch vehicle procurement program)	(200,000)	(71,000)	
Atlas Centaur (launch vehicle procurement program)	(8,800,000)	(8,000,000)	(6,600,000)
Total (including launch vehicles)	(52,188,000)	(71,071,000)	(54,600,000)

The Mariner program objective is to conduct precursory missions with 400- to 1,200-pound class spacecraft, for the exploration of the planets and interplanetary medium. These missions are to provide a scientific and technological basis for more detailed exploration by larger orbiting spacecraft, probes, and landers. Mariners II and IV measured the magnetic fields, charged particle fluxes, and cosmic dust in interplanetary space and in the vicinity of Venus and Mars respectively. On December 14, 1962, Mariner II observed microwave brightness temperatures of approximately 800° F. on Venus, but did not detect a magnetic field when it passed within 22,000 miles of the planet's surface. On October 12, 1967, Mariner V passed within 2,500 miles of the surface of Venus. The preliminary results are stated above. Mariner IV transmitted to earth the first closeup photographs of another planet after it passed within 6,200 miles of the surface of Mars on July 15, 1965. The next step in the Mariner program for the exploration of the planets is a flyby mission of Mars in August 1969. Mission definition and flight plans which are now nearing completion call for the launch

of two Mariner-class spacecraft which will be instrumented to obtain more scientific information during this one opportunity than has been collected by all previous planetary missions combined.

The basic spacecraft looks much the same as earlier Mariners although it is larger and heavier (approximately 850 pounds as compared to Mariner IV which weighed 570 pounds) because of the increased science requirements. The science instruments consist of two television cameras, an infrared spectrometer, infrared radiometer, and an ultraviolet spectrometer. In addition to these flight instruments, it is also planned to conduct a planetary occultation experiment making use of the spacecraft's radio equipment, and a celestial mechanics experiment using the tracking data.

The launch period for this opportunity opens in mid-February 1969 and extends for about 7 weeks into early April. By making use of in-flight trajectory corrections, it is possible to have both spacecraft encounter the planet within a given 10-day period. As each spacecraft approaches the planet, one of the two TV cameras on board will commence a picture-taking sequence permitting full photographic coverage of Mars at the increasing resolution. During the near encounter phase, the other TV camera will be turned on along with the IR and UV instruments. All data will be collected and stored on magnetic tapes up to the time the spacecraft is occulted by the planet. After the spacecraft exits from occultation, the tapes will be played back to the earth tracking stations.

The experience in lunar exploration has been carefully reviewed to determine its applicability to the planetary exploration program. This experience indicates that several orbiter missions (about four as a minimum) are required to make the necessary remote observation and to support landing missions. Two orbiter missions to Mars are planned for both the 1971 and 1973 opportunities. While Titan class launch vehicles are required in 1973, Atlas Centaurs can be used in 1971 because of the low energy requirements associated with the 1971 opportunity.

The 1971 Mariner missions planned for Mars will use the basic Mariner 1969 flyby spacecraft configuration modified to go into orbit about the planet. Because 1971 is a minimum energy year for both heliocentric injection and orbit insertion about Mars, we are able to launch on an Atlas Centaur a Mariner class spacecraft that will orbit Mars with a significnt science payload.

The scientific instruments for the Mariner Mars 1971 missions will be similar to those carried on the Mariner Mars 1969 flyby. However, the scientific data return will be increased up to 10 times that of the 1969 mission. This increase in data return results from the spacecraft being in orbit about the planet allowing multiple measurements and observations of the planet's nocturnal, diurnal, and seasonal variations over a period of several months. In addition, the low point of the orbit will be about 1,200 miles as compared with the nominal 1,800 mile closest approach distance of the Mariner Mars 1969 flyby. This closer distance to the surface will allow higher resolution measurements from all instruments, and will increase the value of the occultation and celestial mechanics experiments.

The Mariner Mars 1971 Orbiter design is based on existing Mariner technology which resulted in successful planetary investigations of Venus during 1962 and 1967, and of Mars during 1965, and was used to develop the spacecraft which will be launched to Mars in early 1969. The actual hardware to be used for the 1971 orbital missions will make maximum use of spare hardware and test equipment from the Mariner Mars 1969 program. Because the Mariner Mars 1969 mission was not an orbital mission, an orbital insertion propulsion subsystem will be developed and integrated with the modified Mariner Mars 1969 hardware to make up the 1971 orbiter.

The Mariner Mars 1971 Orbiter will weigh about 2,100 pounds total when launched. Of this total weight, about 975 pounds will be propellants expended during midcourse corrections and orbital insertion; about 150 pounds will be the dry weight of the propulsion subsystem; and about 975 pounds will remain as useful weight in orbit about Mars. Of the 975 pounds of useful weight, about 100 to 150 pounds will be devoted to the science subsystem.

The Office of Space Science and Applications, NASA Headquarters, is responsible for overall management of the Mariner program. The responsibility for project management is assigned to the Jet Propulsion Laboratory. The Jet Propulsion Laboratory will perform the systems integration function of the prime contractor for Mariner Mars 1969, but subcontracting will be for complete subsystems. Subcontracting will be more extensive in the Mariner Mars 1971 project, with perhaps a system prime contractor for the spacecraft.

During the current fiscal year, the Mariner Mars 1969 project has been completing the design of the spacecraft subsystem and the fabricating of both test and flight hardware. These funds are also being used to initiate testing of the proof test model spacecraft which will extend through the remainder of this fiscal year. Fiscal year 1969 funds will be used for the completion of flight spacecraft testing, launch operations, and the conduct of in-flight mission operations.

The funds requested for Mariner Mars 1971 in fiscal year 1969 will provide for the completion of detailed system design, procurement of Mariner Mars 1969 follow-on subsystems, modification of Mariner Mars 1969 hardware, and development and testing of prototypes of critical subsystems.

Titan Mars 1973

1967	----------
1968	----------
1969	$20,000,000

The orbital reconnaissance of Mars initiated in 1971 will be continued in 1973. In addition, the initial direct measurements of the atmosphere and on the Martian surface will be made by means of a small survivable lander. The objective of the Titan Mars 1973 program is to conduct exploration of Mars with spacecraft sized to the Titan and designed to orbit and land small scientific payloads on the planet, thereby utilizing the technologies and experience developed by the Lunar Orbiter, Surveyor, Mariner, and the phase B Voyager programs. This program represents an intermediate step to achieving the objectives established for the 1973 Voyager mission.

The 1973 missions will make scientific measurements of the physical and chemical properties of Mars, advance the state of the art of the technology required to accomplish advanced Mars orbital missions and to develop the technology for landing a survivable instrument package on the planet's surface.

The orbiter spacecraft design will be based upon the Mariner 1969/Mariner 1971 family. However, modest increases in scientific capability are contemplated. The survivable lander will weigh on the order of 800 pounds, will use aerodynamic drag and parachutes for deceleration in the Martian atmosphere, and will be designed to land a small instrument package on the surface by the use of impact limiter material to absorb the final impact loads.

The orbiter science subsystem, as currently planned, will include instruments to perform surface reconnaissance, obtain information on the surface and atmospheric composition, and to measure thermal radiation emitted from the surface, the atmospheric structure and density, the magnetic field trapped radiation: and the micrometeoroid flux of Mars.

In addition, the S-band occultation and celestial mechanics experiments, similar to those performed on previous planetary missions, will be continued. The instrument complement, plus the increased data storage and transmission capability, will permit up to 10 or 12 times higher data return from the 1973 orbiter mission than the data return from the Mariner Mars 1971 orbit mission.

The lander science subsystem, as currently planned, will include instruments to directly measure the density profile; and atmospheric temperature, pressure, and composition, during entry and make surface measurements, including pictures and soil composition water content and wind velocity.

The lander may be released from out of orbit or through direct descent prior to orbital insertion and will make its measurements during entry and after landing on the surface. The data collected will be relayed to the orbiter for subsequent transmission to the earth.

Current year funds budgeted under the advanced planetary missions technology program are being used to conduct mission studies and to define feasible variations from the baseline design described above. Variations being studied include the use of spacecraft propulsion subsystem for combined interplanetary injection and orbital insertion, thus potentially increasing the useful weight in orbit to about 2,500 pounds; the feasibility of deploying landers by direct descent versus out of orbit; and the evaluation of scientific gains as a function of the required performance for probes and landers. The fiscal year 1969 funds requested will provide for the establishment of functional specifications, award of a systems prime contract, initiate detailed system designs, and provide for the development, fabrication, and testing of engineering models for both the orbiter and the landers. During fiscal year 1969, the science payload will be selected and principal investigators supported in the development of scientific instrumentation.

TITAN-MARS 1973 MISSION

Mr. EVINS. You are asking for $107,300,000. Tell us about the Titan-Mars, and what it will cost.

Dr. NAUGLE. By that you mean the two launches to Mars in 1973, which include two orbiters and two landers. Each launch vehicle will contain an orbiter and a lander.

The total cost of the spacecraft is of the order of $350 million. To that must be added the cost of the Titan launch vehicle, each of which costs about $20 million. So the total cost of the program is of the order of $390 million. That is the total cost spread over a number of fiscal years, Mr. Chairman.

Mr. EVINS. Doctor, let's take each one of these specifically. The Voyager program was not funded last year.

Dr. NAUGLE. Mr. Chairman, let me point out some things here. First of all, you will note the lunar and planetary program is going down from $184 million in 1967 to $141 million in 1968, and down to $107.3 million in 1969.

Mr. EVINS. We have that in the record.

FUNDS FOR VOYAGER, SURVEYOR, LUNAR ORBITER

Dr. NAUGLE. Voyager shows only $1 million in 1968 and nothing in 1969. We are not asking for any money for Voyager. We have canceled the Voyager program as a result of the congressional action and the need to keep expenditures down.

The Surveyor and the Lunar Orbiter programs have been completed successfully. We are not asking for any more money for those after 1968.

SUPPORTING RESEARCH AND TECHNOLOGY

Mr. EVINS. You go up from $19 million to $30 million for supporting research.

Dr. NAUGLE. Mr. Chairman, a major share of that increase is for the lunar program. We have developed this capability which Dr. Mueller and Mr. Webb described earlier this morning to carry a much larger and much better group of scientific instruments to the surface of the moon. We are including in the supporting research in the lunar area an increase to develop the experiments that will make use of that capability.

We will use the Mariner-Mars 1971 orbiter for reconnaissance of the planet Mars to give us information about the temperature distribution over the surface of the planet, the water distribution over the surface of the planet, and the variation with the seasons of the surface features of Mars.

The Titan-Mars 1973 will contain two orbiters to continue that work——

COST OF TITAN-MARS

Mr. EVINS. What is the ultimate cost of the Titan-Mars program?

Dr. NAUGLE. $390 million.

Mr. EVINS. How much was the projected cost of the Voyager program which was suspended?

Dr. NAUGLE. The Voyager was $2.5 billion. In addition to that, there was another $200 million for the——

Mr. EVINS. $2.5 billion was the cost of the Voyager. They deferred that and you substituted Titan-Mars 1973?

Dr. NAUGLE. Titan-Mars 1973 and Mariner-Mars 1971. The combined cost of those two is about one-fifth of the cost of the Voyager program.

Mr. EVINS. What is the total cost of the two?

Dr. NAUGLE. The total cost of the two is about $500 million.

Mr. EVINS. Do you think this can be completed by 1973?

Dr. NAUGLE. Yes, sir, it will have to be.

Mr. JONAS. You are going to use the results of your 37-odd million dollars expenditure on Voyager in the Titan-Mars?

Dr. NAUGLE. Yes, we certainly are.

Mr. JONAS. You will salvage that investment in using it?

Dr. NAUGLE. We certainly will, Mr. Jonas.

INPUTS TO TITAN-MARS MISSION

Mr. EVINS. To what extent is Titan-Mars using previously developed equipment?

Dr. NAUGLE. It will use the Titan launch vehicle. We may very well use the thoroughly developed and thoroughly proven Centaur on top of the Titan to give us added propulsion. We will use the orbiter capability that we will have developed as a result of the 1969 and 1971 missions. We will use in the lander, as Mr. Jonas has pointed out, the work that was under way in the Voyager program. We will also use some of the work that was carried out in the Ranger program. You may recall the Ranger had a rough lander in it and we are using some of the technology from that program in this Titan-Mars lander.

EXPECTED RESULTS FROM TITAN-MARS 1973

The Titan-Mars lander in 1973 will be a survivable lander that will give us information on the atmosphere as it goes through it. Then it will land. We expect that we will be able to get pictures of the Martian surface and be able to make some measurements of the planetary surface similar to those we made of the Moon with the Surveyor. I would like to remind the committee again to compare this program with the automated program we used on the moon where we had the three Rangers, the five orbiters, and the seven landers. Here we have three flybys which are somewhat analogous to the three Rangers. We have four orbiters, where we had five of the moon, and bear in mind that Mars is a dynamic planet which has changing seasons, and finally we are starting with two landers.

Mr. EVINS. You are supposed to fly two missions to Mars in 1969 and two missions to Mars in 1971 and then you hope to put the Titan up in 1973?

Dr. NAUGLE. That is right.

Mr. EVINS. So you want to fly two of these each year?

Dr. NAUGLE. That is right, for the next three opportunity years.

Mr. EVINS. Do you consider these very nebulous missions?

Dr. NAUGLE. No, sir. We consider these very well defined missions, Mr. Chairman.

I might point out that when the Voyager was canceled we went through a great deal of reexamination on the planetary programs to try to determine what was a reasonable level——

Mr. EVINS. Do you think the price is worth it at this time?

Dr. NAUGLE. I certainly do. As the President has indicated in his message, he thinks that it is worth it at this time. This is something that has been very carefully considered both within the Government and, outside the Government, by academic scientists. We have looked at the technical feasibility, and we think it is a very sound program, one which this country and this Congress and the people will be proud of having supported a number of years from now.

LAUNCH VEHICLE PROCUREMENT

Mr. EVINS. Well, we will now look at the launch vehicle procurement program. This is the Scout, Delta, Thor Agena, and Centaur. You are asking for $128,300,000 for this for the next year.

How many of these launch vehicles do you expect to procure in number?

Dr. NAUGLE. We would plan to launch a total of 18 this year and 18 or 19——

LAUNCH RATE

Mr. EVINS. Wouldn't one a month be enough?

Dr. NAUGLE. Not for all of these.

Mr. EVINS. This goes up the last 2 years also, Dr. Naugle.

Dr. NAUGLE. The launch vehicle funds here are used to procure the spacecraft to launch the satellites.

Mr. EVINS. You need a few in storage; you need a few handy in case you want to launch. You need to have the vehicles.

JUSTIFICATION MATERIAL

We will place in the record pages RO7–1 through RO7–8.

(The pages follow:)

OFFICE OF SPACE SCIENCE AND APPLICATIONS—LAUNCH VEHICLE PROCUREMENT PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the launch vehicle procurement program is to provide for the purchase of launch vehicles for space missions. The program includes the procurement of vehicle hardware, launch services, and other supporting activities in addition to providing for a sustaining engineering and maintenance effort at the launch sites and the contractor plants. The program also includes an advanced studies/supporting research and technology effort to analyze future mission requirements and investigate new technological developments. Those vehicles currently being procured are: Scout, Delta, Thor Agena, Atlas Agena, and Centaur.

The launch vehicle procurement program is presented as a separate program, but vehicle funding associated with specific flight projects is also shown parenthetically with these projects. Sustaining engineering and maintenance costs are not included in the parenthetical notations shown with each mission project as effort is general in nature and benefits all projects associated with a particular launch vehicle system.

NASA's goal is to purchase launch vehicles in the most efficient and economical manner possible. One of the most important considerations in the management of this program is that of trying to determine the optimum number of vehicles to be ordered on each production contract. Before such an order is placed, the following factors are considered: (1) current and projected inventories, (2) launch schedules, (3) procurement leadtimes required for vehicle delivery, and (4) the most economical production rates of NASA's vehicle contractors.

Prior to the fiscal year 1968 submission, launch vehicle development was presented as a separate program. Since no major development is proposed for fiscal year 1969, the remaining development activities—supporting research and technology and advanced studies—are again shown in the launch vehicle procurement program.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology/advanced studies		$4,000,000	$4,000,000
Scout	$9,400,000	10,200,000	16,500,000
Delta	23,835,000	30,300,000	30,800,000
Agena	29,396,000	14,400,000	14,000,000
Centaur	55,019,000	68,200,000	63,000,000
Total	117,650,000	127,100,000	128,300,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
John F. Kennedy Space Center	$2,387,000	$5,200,000	$5,800,000
Marshall Space Flight Center		500,000	500,000
Goddard Space Flight Center	15,743,000	18,000,000	28,300,000
Jet Propulsion Laboratory		100,000	100,000
Electronics Research Center		1,600,000	1,700,000
Langley Research Center	9,400,000	10,600,000	16,800,000
Lewis Research Center	81,889,000	78,400,000	74,400,000
Headquarters		900,000	700,000
Western Support Office	8,231,000	11,800,000	

OVERALL PLAN FOR LAUNCHES DURING THIS PERIOD

Vehicle	Calendar year 1967	Calendar year 1968	Calendar year 1969
Scout	4	7	5(+1 B/U)
Delta	6	6	6
Agena	7	2	3
Centaur	4	3	4
Total	21	18	18(+1 B/U)

Note: Above table includes advanced research and technology missions but excludes reimbursable launches and vehicles procured for other agencies.

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY—ADVANCED STUDIES

	1967	1968	1969
Advanced studies		$1,000,000	$1,000,000
Propulsion		100,000	300,000
Guidance, control, and navigation		1,600,000	1,700,000
Instrumentation and electronics		500,000	200,000
Structures and materials		700,000	600,000
Vehicle engineering		100,000	200,000
Total		4,000,000	4,000,000

The objective of advanced studies is to define vehicle requirements for future missions and to establish the methods by which performance in excess of current capabilities can best be developed. Through these studies, areas of research and new technology development, which may be most fruitful in terms of mission benefits, are indicated. Supporting research and technology efforts are directed toward developing the new technology for which a need has been demonstrated by advanced studies.

The fiscal year 1967 and fiscal year 1968 advanced studies have been directed toward misison and technology requirements for very high velocity launch vehicles. Particular efforts in technology were directed toward high energy and storable upper stages to be used with existing lower stages. Fiscal year 1969 studies will be concerned with mission analyses, investigation of vehicle and stage alternatives, and program planning.

Supporting research and technology tasks being conducted in the fiscal year 1968 program include computation of performance of low-thrust propusion systems, alinement and calibration of strapdown guidance systems, test program preparation for strapdown system evaluation, trajectory analysis support for the advanced kick stage, gyro test and evaluation, development of a guidance roll and yaw compensation system, S-band antenna studies, pressurization and dynamics of cryogenic tanks, tests of insulated liquid hydrogen tanks, storage of hydrogen in space vehicles, and other tasks important to the future of the launch vehicle program.

In fiscal year 1969, supporting research and technology work will continue on the development of strapdown guidance systems for small and medium class launch vehicles for science and applications missions. Effort will also be directed toward propulsion system/mission analysis research, investigation of advanced pressurization systems oxidizer tank and system farbrication, fuel tank and system fabrication, spacecraft prototype engine development, throttling techniques for hydrazine reactors, improvement of a solid propellant motor for use on the Scout velocity package, solid stage switching for use in space vhicles, investigation of a large heat shield for use with launch vehicles, glass-fiber conical cryogenic tank support, and propulsion module integration studies.

SCOUT PROCUREMENT

	1967	1968	1969
Vehicles	$2,047,000	$3,500,000	$7,000,000
Motors	3,263,000	1,200,000	3,500,000
Logistics and spares	90,000	500,000	1,000,000
Sustaining engineering and maintenance	4,000,000	5,000,000	5,000,000
Total	9,400,000	10,200,000	16,500,000

Scout is the smallest and the only all solid-propellant launch vehicle in the NASA vehicle family. It is used for a variety of small scientific payloads such as small satellites, atmospheric and space probes, and high speed reentry experiments. Between the launching of the first Scout vehicle on July 1, 1960, and December 1967, there have been 58 launches. Although NASA has primary responsibility for the management of the Scout program, this vehicle has been utilized by DOD, AEC, foreign countries, and international organizations.

The Langley Research Center has managed the Scout project for NASA since its inception. The prime contractor for the production, checkout, and launch of Scout vehicles is Ling-Temco-Vought (LTV), Dallas, Tex. Scout vehicles are normally launched from the Western Test Range, Calif., or Wallops Station, Va. In 1967, a Scout vehicle was successfully launched for the first time from the Italian San Marco platform in the Indian Ocean off the coast of Africa. Thus, there are now three sites capable of launching Scout vehicles.

In fiscal year 1969 funds for Scout procurement will be utilized for the production, assembly, checkout, and launch of the Scout vehicle. In addition, funds will also be required to support LTV systems management, for logistics, and for vehicle adaptation for individual missions.

Fiscal year 1969 funds for Scout sustaining engineering and maintenance will be utilized for maintenance of ground support equipment at the two American launch sites, logistics, transportation, management and engineering support, minor improvements in the Scout vehicle, and other support activities.

DELTA PROCUREMENT

	1967	1968	1969
Delta production	$8,544,000	$14,700,000	$12,000,000
Thor boosters	7,000,000	6,900,000	9,500,000
Propellants	500,000	700,000	700,000
Third stages	490,000	1,000,000	1,000,000
Sustaining engineering and maintenance	7,301,000	7,000,000	7,600,000
Total	23,835,000	30,300,000	30,800,000

The Delta vehicle family has proven to be one of the most economical, versatile, and reliable members of the NASA launch vehicle stable. Its flight configuration consists of the Thor booster, the Delta second stage and a third stage if necessary. If the third stage is required, an FW–4 or TE–364 motor may be utilized depending upon mission requirements. These configurations are capable of lifting a wide variety of medium-sized payloads into earth orbit or launching small spacecraft into lunar orbit or deep space. To date the Delta vehicle has successfully launched more meteorological, communications, and scientific spacecraft than any other NASA vehicle. Through December 1967 there have been 55 Delta vehicle launches of which 51 have been scored as successful, and Delta has achieved for the second time 22 consecutive successful launches.

NASA has assigned primary management responsibility for the Delta project to the Goddard Space Flight Center. The prime contractor for the Delta vehicle is the McDonnell-Douglas Corp., Santa Monica, Calif. NASA procures the first stage Thor boosters through the Air Force, which has the primary responsibility for the production of this vehicle stage. The Delta vehicle is launched from the Eastern Test Range, Cape Kennedy, Fla., and the Western Test Range, Calif.

Fiscal year 1969 funds for Delta procurement will be used to complete the purchase of 14 first and second stage vehicles initially funded in fiscal year 1968, and to procure associated vehicle hardware, launch services, and other supporting services at the launch sites and production facilities. Initial funding for the production of 10 additional vehicles is planned for fiscal year 1969.

During fiscal year 1969, Delta sustaining engineering and maintenance funds are required for the maintenance of ground support equipment at the two launch sites, for vehicle-related engineering support, and for minor product improvement efforts. Improvements planned for fiscal year 1969 include the modification of the FW–4 motor nozzle and conversion to S-band telemetry. Major improvement efforts initiated in fiscal year 1968, such as the adaptation of the long tank Thor booster and the TE–364 third stage to Delta, will be completed in fiscal year 1969.

AGENA PROCUREMENT

	1967	1968	1969
Agena production	$3,564,000	$1,400,000	$2,500,000
Agena mission modifications	9,354,000	7,700,000	5,000,000
Thor procurement	4,257,000	2,000,000	4,400,000
Atlas procurement	7,176,000	1,900,000	
Propellants	310,000	200,000	100,000
Sustaining engineering and maintenance	4,735,000	1,200,000	2,000,000
Total	29,396,000	14,400,000	14,000,000

The Agena project includes the Thor Agena and the Atlas Agena launch vehicle systems. The Thor Agena has been utilized for polar orbital missions which exceed the capability of the Delta vehicle. The Atlas Agena has been used for a wide variety of missions, including lifting relatively heavy automated payloads into earth orbit and launching several medium-sized spacecraft on lunar and planetary missions.

During 1967 the Thor Agena vehicle successfully launched the Orbiting Geophysical Observatory IV into earth orbit. Missions launched by the Atlas Agena in 1967 included Mariner Venus 1967, Lunar Orbiters III, IV, and V, and applications technology satellites II and III. Of these missions, all but the ATS–II were successful.

In view of the demonstrated operational success of the more powerful Atlas Centaur and the low projected launch rate of heavy automated missions, NASA intends to phase out the Atlas Agena during fiscal year 1968. The last currently planned launch of a NASA Atlas Agena is early in calendar year 1968, when the OGO–E mission is scheduled. Following this launch NASA plans to close down its Agena facility at the Eastern Test Range. Thor Agena vehicles will continue to be launched from the Western Test Range.

Within NASA the management of the Agena project has been assigned to the Lewis Research Center. Lockheed Missiles & Space Corp., Sunnyvale, Calif., is the prime contractor for the Agena stage. McDonnell-Douglas Corp., Santa Monica, Calif., and General Dynamics/Convair, San Diego, Calif., are prime contractors for the Thor and Atlas boosters, respectively. The Agena and the booster stages are purchased from these contractors through the U.S. Air Force, which has primary management responsibility of these vehicles.

Fiscal year 1969 funds for Agena procurement are required for the purchase of Agena upper stages and Thor boosters. In addition, it will be necessary to fund mission-peculiar adaptation, launch services, and other support activities.

Funds for Agena sustaining engineering and maintenance in fiscal year 1969 are required for maintenance of ground support equipment, engineering services, and minor improvements in support of the continued utilization of the Thor Agena launch vehicle.

CENTAUR PROCUREMENT

	1967	1968	1969
Vehicle production	$30,755,000	$44,700,000	$38,000,000
Atlas booster procurement	9,231,000	8,400,000	7,000,000
RL–10 engine procurement	3,875,000	500,000	2,400,000
Propellants	678,000	1,400,000	1,500,000
Sustaining engineering and maintenance	10,480,000	13,200,000	14,100,000
Total	55,019,000	68,200,000	63,000,000

The Atlas Centaur is the largest launch vehicle currently employed by NASA exclusively for automated space missions. It consists of the Atlas booster and the recently developed Centaur upper stage which was the first rocket in the national launch vehicle family to utilize liquid hydrogen/liquid oxygen propellants. These high energy propellants and the Centaur's capability to restart in space make this vehicle uniquely qualified to perform a variety of high velocity deep space missions as well as relatively large earth orbit and lunar missions. Since development was completed in 1966, the Centaur has been launched seven times in support of Surveyor missions and all launches have been successful. In the future, NASA plans to launch a variety of missions on the Atlas Centaur, including Mariner Mars, orbiting astronomical observatories, advanced technology satellites, and Pioneer space probes.

The Lewis Research Center has primary management responsibility of the Centaur project. The prime contractor for both the Atlas booster and the Centaur stage is General Dynamics/Convair, San Diego, Calif. The Pratt & Whitney Division of United Aircraft, West Palm Beach, Fla., is an associate contractor for Centaur's liquid hydrogen engines. Honeywell, Inc., St. Petersburg, Fla., is an associate contractor for the Centaur guidance system. The Atlas Centaur is launched from the Eastern Test Range, Cape Kennedy, Fla.

During fiscal year 1969 funds are required to continue funding for OAO, ATS, and Mariner Mars 1969 vehicles. Funds are also required to initiate procurement of vehicles for the Mariner Mars 1971 and ATS F and G missions. In addition to procurement of Atlas and Centaur hardware for these missions, funding support for procurement of RL–10 engines, inertial guidance systems, launch services, management and engineering services at the contractor plant, and for a variety of supporting services is necessary.

Fiscal year 1969 Centaur sustaining engineering and maintenance funds are required for maintenance ground support equipment, engineering analysis, other miscellaneous engineering support activities, and Centaur improvements. Centaur components to be improved include the guidance computer, pulse code modulation telemetry equipment, forward adapter, fixed insulation, and others. This is necessary to enhance the reliability and flexibility of this vehicle, which NASA plans to make the mainstay for launching heavy and high-energy missions.

Bioscience Program

Mr. Evins. Look at your bioscience program. Bioscience has two principal objectives. The first, to determine the effects of the space environment on terrestrial organisms.

The second objective is to determine the location, origin, nature, and level of development of extraterrestrial life.

You are asking for $48.5 million, and this is a higher level than in the past 2 years.

What did you accomplish last year in the bioscience program, and what do you propose to accomplish in 1969?

BIOSCIENCE ACCOMPLISHMENTS

Dr. Naugle. Mr. Chairman, the major significant achievement last year was the successful launch of biosatellite II. I testified earlier this morning about some of the significant results that came out of that.

Mr. Evins. Radiation, you testified, makes things lighter.

Dr. Naugle. Mr. Chairman, the combination of radiation and weightlessness increases the effect of radiation on, say, a wasp. It may increase the mutation rate, and we think that at this time what we have here is a new tool to better understand what takes place in living systems.

A number of years ago, when biologists began to use radiation to study living systems, this gave them a new tool. They could tag a chemical and see how it progresses through the body, or they could see how a cell takes up a particular chemical. It gave them a new tool with which to understand living systems. We think that the weightless system and the type of knowledge that you get there will put in the hands of biologists yet another new tool to help them to understand life.

BIOSCIENCE COMMUNICATIONS

Mr. Evins. I believe that you, Dr. Handler, and others of our outstanding people in the bioscience field have a great deal of knowledge. It says the bioscience communications program meets the need for effective and timely communication between NASA program scientists and administrators, scientists in universities, industry, and other Government agencies. This program provides support for the Space Science Board of the National Academy of Sciences, scientific training programs, research literature and reports, and conferences, symposia, and informal meetings in furtherance of timely communications in the bioscience disciplines.

That gives you a lot to talk about and a lot of conferences.

Dr. Naugle. Mr. Chairman, we are charged with the responsibility of rapid and thorough dissemination of the knowledge that comes out of the space program. The bioscience communications program will further that.

Mr. Jonas. Doctor, could you give us a little thumbnail report on what you found about the result of your studying the controlling factors in the origin of life, in determining the uniqueness of life here on earth? That is one of your objectives in this field.

Could you produce a little practical results?

IMPORTANCE OF BIOSCIENCE

Dr. NAUGLE. Let me set the record straight here, Mr. Jonas. I am not a bioscientist.

One of the significant pieces of information that has emerged over the past 2 or 3 years here is the remarkable similarity between all forms of life on earth. You find the same chemical processes, the same types of molecules which control the growth of living systems which set the genes pattern. One of the major questions we have is whether the phenomena we are seeing here is unique to life on earth, or if you had living systems growing on Mars in a different environment, whether you would have a different kind of life. This will give us an entirely new perspective in which to look at life on earth.

We can look downstream at the problems caused by overpopulation, of how you control pollution, of how large numbers of people interact together, or how you provide food. The knowledge that we are gaining about other planets, the knowledge that we gain about life, the people that are trained by doing this research, provides a body of knowledge and a body of people which will be able to tackle those major problems. That is the major, practical importance, Mr. Jonas, of this. It is this store of fundamental knowledge and the training of people.

It could be said that we can let the Russians study the planets, and to the extent they are making that knowledge available to us, we could wait until they did all of this. We would lose several things by doing that. One of the chief losses would be the body of trained people who have participated in this, for then no one would understand how to use the data and what the significance of it is.

Also in terms of morale, the pride of the American people, we would lose that.

FLIGHT OF BIOSATELLITE II

Mr. JONAS. We have put up two of these, have we not?

Dr. NAUGLE. The first was a failure.

Mr. JONAS. What did we get out of the second one?

Dr. NAUGLE. The second one where we studied the combined effects of weightlessnes and radiation and studied short periods of weightlessness and its effect on plants, and insects.

Mr. JONAS. Is this being reduced to literature?

Dr. NAUGLE. It is in the literature. There was a symposium here at the National Academy of Sciences on the 23d and 24th of February where the experimenters presented their results. The proceedings of that symposium will be published but the individual principal investigators are putting their reports in the scientific literature. We also have in the NASA program a technology utilization program, in which we systematically search through not only the scientific results that come out but also the technology which is developed to see that it is made available to industrial organizations.

Mr. TALCOTT. How was the first one lost? Did it burn up in space?

FAILURE OF BIOSATELLITE I

Dr. NAUGLE. No, we had a failure. We don't know for sure because we didn't get it back. In order to initiate the recovery you have to fire

a retrorocket to slow it down to bring it back in. Everything worked fine up until the time, we sent the command and the retrorocket didn't fire. As a result the spacecraft stayed in orbit. As atmospheric drag slowed it down, it finally did come in but were not able to recover it.

Mr. JONAS. It actually came down and lit in the ocean some place?

Dr. NAUGLE. We believe it came down and landed in the ocean.

JUSTIFICATION MATERIAL

Mr. EVINS. We will place in the record pages RD 8–1 through RD 8–8. Let us suspend until 1:15.

(The pages follow:)

OFFICE OF SPACE SCIENCE AND APPLICATIONS—BIOSCIENCE PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The bioscience program has two principal objectives. The first objective is the attainment of a thorough understanding of the effects of the space environment on terrestrial organisms. Its implementation includes ground-based research, the Biosatellite project, and development of flight experiments for other missions.

The flights of Biosatellites I and II have thoroughly checked out the engineering design and integrated operation of the spacecraft systems. The system deficiencies encountered with the first flight were corrected and Biosatellite II was recovered satisfactorily. The objective of the experiments carried in Biosatellite II was to determine the effects of the space environment on simple forms of life such as amoeba and frog eggs, seedlings, and plants, especially with reference to interaction of weightlessness with a known intensity of ionizing radiation. The subsequent flights, with more complex forms of life and flight duration up to 30 days, will be utilized to determine the effects of weightlessness on mammalian systems and the effects of an environment disassociated from the normal 24-hour day/night cycle related to the earth's rotation. Two flights are planned for the 30-day mission and two for the 21-day mission.

The second objective of the bioscience program is the search for extraterrestrial life, with the primary emphasis directed initially to the moon and nearest planets. The specific aims of this objective include: (a) Physical and chemical evaluation of planetary surfaces as a possible environment for life; (b) determination of whether or not life exists, or has existed; (c) if life in some form exists, determination of its characteristics; and (d) if no life exists, investigation of the pattern of chemical evolution in order to evaluate the probability of its future occurrence either spontaneously or by contamination. The planetary quarantine program has the objective of minimizing the possibility that terrestrial organisms could contaminate a planet and thus destroy its scientific value as a means of testing the various hypotheses regarding the existence of extraterrestrial life. Continuous effort will be made before initiation of planetary flights to assure an adequate understanding of and solution to the very complex problems associated with this planetary quarantine effort.

A supporting program of basic and applied research is being conducted in conjunction with and in support of the bioscience program objectives. This effort includes such work as developing techniques for identifying organic molecules and fossils from pre-Cambrian rocks which will be applied to extraterrestrial samples either in situ or on returned samples, studies on the probability of growth of viable organisms on the planets, and the probability of release from space flight hardware that impacts at high velocity. Studies are being conducted on the use of electron microscopes to magnify or demagnify images several thousandfold to use in collection and storage of information in extraterrestrial studies. Evaluation of the results of the Biosatellite II flight data as compared to ground-based S.R. & T. is in process. Studies on the effects of acceleration and weightlessness are continuing, and flight studies of gravity level preference are being accomplished.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$10,050,000	$11,800,000	$16,000,000
Biosatellite	31,950,000	30,000,000	32,500,000
Total	42,000,000	41,800,000	48,500,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Marshall Space Flight Center	$100,000	$55,000	$105,000
Goddard Space Flight Center	369,000	134,000	156,000
Jet Propulsion Laboratory	954,000	1,342,000	1,448,000
Wallops Station	25,000	40,000	185,000
Ames Research Center	32,941,000	30,963,000	33,530,000
Langley Research Center	160,000	85,000	85,000
NASA headquarters	7,451,000	9,181,000	12,991,000

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Exobiology	$2,350,000	$3,500,000	$4,000,000
Environmental biology	1,627,000	1,965,000	3,265,000
Behavioral biology	1,621,000	1,948,000	3,248,000
Physical biology	1,842,000	1,687,000	2,587,000
Planetary quarantine	1,810,000	1,800,000	2,000,000
Biocommunications	800,000	900,000	900,000
Total	10,050,000	11,800,000	16,000,000

Exobiology

An integral and perhaps inevitable event in the origin and evolution of the universe was the origin of life. An understanding of the controlling factors in the origin of life and a determination of the uniqueness of life on the earth are the primary objectives of the exobiology program. The research areas considered basic to the program area are:

1. Chemical evolution, a study of the chemical events on the primitive earth or on any primitive planet with a similar history which preceded and led to the origin of life. There are two approaches to chemical evolution: (a) Abiogenesis is the synthesis of biologically significant organic molecules by the application of energy (electrical discharge, ultraviolet radiation, heat, etc.) to the simple components (methane, ammonium, water) of the primitive atmosphere, and (b) organic geochemistry which includes analysis of ancient rocks and sediments of the earth, moon and other planets, for fossils (both chemical and biological), providing a record of the events taking place at the time of the origin of life. Extraterrestrial analyses can be done in situ or on returned samples.

2. Biological adaptation, a study of the response of terrestrial organisms (primarily microorganisms) to extremes of environment (temperature, radiation, pressure, atmospheric composition, water availability, etc.) likely to be characteristic of extraterrestrial environments. Two basic problems are being explored, survival and growth. Are terrestrial organisms accidently landed on an extraterrestrial surface likely to survive and be detected inadvertently by our life detection experiments, and are terrestrial organisms likely to grow and destroy an indigenous life form? What are the limits of environmental extremes which carbon-based life can tolerate (so that we may estimate the likelihood of life on any given planet? Are there other chemistries which could produce a "living" system capable of tolerating quite different environments than we ordinarily consider?

3. Life detection, the development of techniques which will allow us to determine the presence or absence of past, present or future life elsewhere in the universe. The emphasis is on automated systems performing relevant environmental measurements and chemical analyses early in the program, evolving to more complex payloads making more integrated and sophisticated measurements and ultimately to unmanned and even manned laboratories. The most likely techniques are those which seek the more basic attributes of terrestrial life—organic chemical, metabolic, and growth analyses, as well as imaging systems for visual detection and morphology. Ultimately, data on all of these basic attributes will be required, hopefully on a single sample.

Environmental Biology

The environmental biology program deals with those fundamental research projects seeking to understand the effects of various aspects of the space environment, such as weightlessness, acceleration, vibration, radiation and magnetism, on living systems ranging from the microorganism to man. The approach deals with investigations at the molecular, cellular, system, and organism level of development.

There is little systematic information available concerning the effects of mechanical forces on complete biological systems. One of the greatest scientific challenges of today is an understanding of gravity as an environmental factor and the role it plays in the origin, nature, and function of highly organized life.

Accurate information is required concerning the availability of earth organisms to live, grow, and repopulate in planetary environments. Ways of adaptation that were adequate under given circumstances here in the earth environment may no longer be adequate when circumstances change in the space and planetary environment.

With the extension of space missions to the planets, regenerative life support systems will be needed. Research on hydrogen-fixing bacteria indicates an ability to supplement current systems with living or bioregenerative organisms that can utilize animal wastes and carbon dioxide to synthesize protein, fat, and other nutrients. This bacterium, known as hydrogenomonas, fulfills its energy requirements with hydrogen from the electrolysis of water.

The microflora or bacteria associated with man are vital to his well-being and normal function. Confinement of man for prolonged periods in closed environments (for example, a space capsule) could conceivably cause abnormal situations which may be either beneficial or detrimental to him. To study the interactions of man and microbes under conditions of confinement, the germfree animal provides a unique baseline for the establishment of model systems which are considered prerequisite to control measures, in contrast to conventional animals with their diversity of ill-defined, and unpredictable, indigenous microflora.

Behavioral biology

The role of behavioral biology in space bioscience is twofold: (1) to explore the ways in which the extreme conditions of space flight affect the behavior of organisms, and (2) to use the unique features of the space environment to advance the analysis of behavior. In addition to weightlessness, which represents the principal unique factor in space, important effects upon behavior include drastic reductions in familiar modes of sensory stimulation, the removal or alteration of ordinary day-night cycles and, particularly for higher forms, a rather severe kind of social isolation.

A major area of endeavor is the border region between perception and control of movement. The origin and maintenance of eye-hand coordination is an extremely promising topic for current research in behavioral biology. The various feed-back and feed-forward mechanisms involved in manipulatory behavior have become susceptible to laboratory experimentation. If there is any deterioration in the performance of high-level motor skills it is important to learn about this from the standpoints of astronaut safety and a deeper understanding of mechanisms in sensorimotor coordination.

Orientation in space is engaging the attention of investigators interested in understanding and controlling those functions which are essential to extravehicular activity and those other maneuvers in space which require complex behavior. Both ground-based and inflight studies on the sensation of gravity such as the determination of thresholds for angular and linear acceleration and responsiveness of the otoliths, semicircular canals, and other gravi-receptors to both transient and prolonged stimulation will contribute to this understanding.

Absence of the day-night cycle and other periodic aspects of the earth environment make space an ideal laboratory for learning about the origin and nature of circadian rhythms. Interest in this subject extends to a concern for behavioral and other biological events, observed in man, with a periodicity of approximately 24 hours, exemplified by the cycle of sleep and wakefulness. Studies of various stages of sleep, particularly those dealing with neurophysiological and biochemical changes during that stage associated with rapid eye movement promises new knowledge equally relevant to man in space and in his normal environment. The relationships between the requirements for sleep, the process of fatigue, and the effects of gravity remain almost totally unexplored.

Physical biology

The physical biology program supports research in comparative physiology, bioinstrumentation, biophysics, and theoretical biology. Research in comparative physiology includes studies on living organisms which specifically lend themselves to investigations in orbiting biological vehicles, on the nutritional requirements of living organisms for prolonged space travel, and on the physical dynamics of various physiological and behavioral systems.

The dynamics of the body temperature regulatory system, the blood flow (cardiovascular system), and the hormonal system are being studied by physical modeling and analysis in an attempt to understand the mechanics of these systems under normal conditions as well as in stress situation.

Various types of biological instrumentation are being developed to measure and analyze biological, biochemical, and biophysical phenomena. In biological telemetry, work is proceeding on the development of a multichannel sensing implantable device in order to measure, simultaneously, a number of biological and behavioral activities, and to enable measurement of normally inacessible physiological activities under a variety of conditions. This is especially important in space flight experimentation where data have to be telemetered and acquired under conditions not normally found in earth laboratories. Electron microscopic techniques are being used to develop a method of storing data accumulated during space flight. These techniques may allow storage of data by miniaturizing the information to 1/100,000 their usual size.

In the area of biophysics, research is being conducted on biological systems at the molecular and cellular levels. It has been shown that some proteins carry their ancestral type to some degree in cells as far remove in relationship as spinach, bacteria, and human heart muscle. In theoretical biology, work is proceeding on determinations of what organic and life-related molecules can exist under the atmospheric conditions of pressure and heat that are found on other planets.

Planetary quarantine

The search for extraterrestrial life cannot be successfully prosecuted unless planetary spacecraft are kept free of terrestrial contamination until the exploration is completed. With the successful accomplishment of each flight, knowledge is added that makes it possible to improve the design of succeeding missions. Thus the knowledge gained by both Venus flybys in 1967 has permitted a reassessment of the possibility of contaminating that planet. Early flybys of Mars will assist in the design of later landing missions, particularly in the design of effective planetary quarantine measures. No mission has either confirmed or denied the possibility of the existence of life in the outer atmosphere of Venus, on Mars, or below the surface of the Moon.

Both major launching nations have accepted the criterion that there must not be more than one chance in a thousand of contaminating a planet during the period of biological exploration. This level of safety has required rather rigorous sterilization of the spacecraft by dry heat before launch and protection of the sterile capsule from recontamination during launch. These requirements have had a severe impact on the reliability of the spacecraft.

Up to the past year it was not believed to be possible to achieve high reliability of sterilization and mission reliability. Recent developments, however, suggest that it may be possible to substantially reduce the heat requirements. Intensification of investigations in fiscal year 1969 should result in reduction of the sterilization requirements and substantial reduction in costs.

In the operational area all lunar flights have been monitored to provide an inventory of the micro-organisms landed on the moon. These operations are being extended to Apollo in order that life on the returned lunar samples may be more quickly identified and the quarantine period for returned astronauts and lunar material be shortened.

Bioscience communications

The bioscience communications program was established to meet the growing need for effective and timely communication between NASA program scientists and administrators, scientists in universities, industry, and other Government agencies. Its activities are designed to meet the information needs of each area of the bioscience program in directing and coordinating its activities with a maximum of efficiency and foresight, and to provide the scientific community with access to information on the scientific products of these programs.

The bioscience communications program provides (1) partial support of the Space Science Board of the National Academy of Sciences and its subcommittees, (2) training of scientists through research associateships and summer institutes, (3) consultation to administrative program scientists, (4) supplemental cross-disciplinary communication between various interfaces of the physical and biological sciences, (5) research literature and report analyses, current status reports, etc., (6) conferences, symposia, and informal meetings.

BIOSATELLITE

	1967	1968	1969
Spacecraft	$24,544,000	$23,842,000	$20,478,000
Experiments	6,861,000	5,894,000	11,028,000
Operations	545,000	264,000	994,000
Total, spacecraft operations	31,950,000	30,000,000	32,500,000
Thor-Delta (launch vehicle procurement program)		(3,900,000)	(5,900,000)
Total (including launch vehicles)	(31,950,000)	(33,900,000)	(38,400,000)

The first two Biosatellite flights (3 days duration) investigated the biological effects on a variety of cells, plants, and simple forms of life and the effects of weightlessness combined with radiation on plants, animal cells, and insects. Biosatellite I was successfully launched on December 14, 1966, but was not recovered due to failure of the retrorocket system. Biosatellite II was launched on September 7, 1967, and recovered on September 9, 1967. The third and fourth flights, of 30 days duration, will investigate the effects of weightlessness on a primate's general metabolic behavior and performance, and cardiovascular and nervous systems. The fifth and sixth flights, of 21 days duration will consist of experiments to determine the effects of weightlessness on plant growth and development, growth of isolated human cells, gross body composition and function in mammals, and circadian (24 hour) rhythms.

Management responsibility for the Biosatellite program has been assigned to the Ames Research Center. Spacecraft development and fabrication is under contract to the General Electric Co., Reentry Systems Division, located at Philadelphia, Pa.

The Biosatellites are launched from Cape Kennedy by two-stage, thrust-augmented Thor Delta launch vehicles. The experiments are contained in the reentry vehicle while other supporting equipment is located in the adapter section. The adapter is separated from the reentry vehicle prior to the retro maneuver. Recovery of the spacecraft is accomplished by the United States Air Force using aerial recovery.

The Biosatellite flights are providing data which has a wide range of applicability. The testing of biological hypotheses in the areas of genetics, developmental biology, environmental physiology, and general metabolism is one result of these flights. The Biosatellites should also provide valuable data pertaining to biological requirements for prolonged manned space flight, and the possibility of delayed effects appearing in later life or subsequent generations of animal subjects, with possible applications to man. Also, these flights should result in the development and test of new instrumentation techniques, surgical preparations, and other procedures and devices which may have medical and other applications to human beings.

Fiscal year 1966 and prior years funding for this six flight program, including launch vehicles, amounted to $61,711,000. Fundings for fiscal year 1967 provided for the subsystem and system qualification testing of the 3-day mission prototype spacecraft, assembly and system acceptance testing of the 3-day flight spacecraft, launch and operations support of Biosatellite I and the design and test

effort to correct the Biosatellite I deficiencies. Also, it provided for the fabrication and qualification of the 30-day mission major subsystems and the functional testing of the 30-day developmental spacecraft model. Funding for fiscal year 1968 provided for the launch operations of Biosatellite II, but emphasized the fabrication, systems functional testing and qualification testing of the 30-day spacecraft as well as continued funding for experiment development for the 30-day and 21-day missions. Funding for fiscal year 1969 will provided for the flight operations of the two 30-day missions, data processing, and analysis and for the procurement of the 21-day experiment flight hardware. Funding requirements subsequent to fiscal year 1969 for completion of this effort, including launch vehicles are estimated to be $25,360,000.

AFTERNOON SESSION

Space Applications Program

Mr. Evins. Gentlemen, the committee will come to order.

Let's take up this afternoon the space applications program of NASA. We are told that the objectives of this program are sixfold: to expand the knowledge of the atmosphere and space phenomena; to conduct a broad program of research oriented toward the application of space techniques for the benefit of mankind; to develop and test procedures for various applications; to fulfill NASA's responsibilities under the Communications Satellite Act of 1962; to develop and implement for the Environmental Science Services Administration (ESSA), Department of Commerce, the operational meteorological satellite system; and to cooperate with other Government agencies in the study and development of space technology. Tell us what NASA's responsibility is under the Communications Satellite Act of 1962.

NASA responsibilities under COMSAT act

Mr. Shapley. Mr. Chairman, under this act NASA has at least two distinct responsibilities. One is to serve as the adviser to the Federal Communications Commission on technical matters relating to communications satellites, to enable them to discharge their function of regulating communications.

Mr. Evins. You serve as an adviser also to the Comunications Satellite System?

Mr. Shapley. Right. Second, under the law, we are required to launch for the Communications Satellite Corporation at their expense whatever satellites they elect to place in orbit.

Mr. Evins. You launch the satellites at their expense and at their request?

Mr. Shapley. Yes, sir.

Mr. Evins. What are your duties with respect to ESSA, the organization in the Department of Commerce?

NASA relationship with ESSA

Mr. Shapley. The working relationship with ESSA is essentially the same. In the case of meteorological satellites, we have the responsibility for developing new and improved satellites. ESSA and the Weather Bureau have the responsibility for stating the operational

requirements and ordering the production satellites which are used for operational purposes.

Mr. EVINS. They decide what they want, and you launch the satellites for them?

Mr. SHAPLEY. At their expense. Through their appropriations they secure funds for the number and types of satellites they believe necessary.

Mr. EVINS. On what basis do you have this authority?

Mr. SHAPLEY. We have an agreement with them. Basically, I believe it is a decision as to the allocation of functions within the executive branch which has been reflected in the President's budget each year for the last 5 or 6 years.

COOPERATION WITH OTHER AGENCIES

Mr. EVINS. You talk about cooperation with other Government agencies, on agriculture hydrology, geography and geology. You cover space, the earth, and the seas?

Mr. SHAPLEY. Yes, sir. These latter agencies mentioned relate to the field which is not as far advanced as either meteorology or communications. This relates to a study of the possibilities of using observations from space to help in the fields of agriculture, forestry, and so forth, the other ones that are listed there. In this case these agencies are very much interested in the possibility that data can be collected from space to aid them.

Mr. EVINS. Do any of these other agencies, other than Commerce, call on you for special information, or reports, or do you just furnish it to them as a result of your research?

SATELLITE RESEARCH AND DEVELOPMENT

Mr. SHAPLEY. I would say that at this stage we are working closely with the other agencies. They are doing a good deal of work under their own initiative and some in conjunction with us. If this should mature into the need for, a requirement for a satellite system of some sort, we would anticipate the same type of relationship we now have with ESSA and the Department of Commerce, namely, that we would continue to do the research and development on the satellites but if satellites were needed for operational purposes these would be the responsibility of and be paid for by the other agencies.

Mr. EVINS. In other words, the space applications are the payoff?

Mr. SHAPLEY. Yes, sir.

Mr. EVINS. This is the result and the use of that technology; is that correct?

Mr. SHAPLEY. Yes, sir.

In this area of earth resources we have devoted as much money as possible this year to further exploring the possibilities with these other agencies.

Mr. EVINS. You state here earth resources satellites can obtain valuable data. I think that in the past you have told us about some of this valuable data which has been procured.

Mr. SHAPLEY. Yes, sir. The programing we have submitted to you here does not include the actual construction or development of a satellite. We are continuing the experiments on sensors with aircraft and other aspects of the program.

FUNDING INCREASE

Mr. EVINS. In 1967 for space applications you had $71 million. Last year your budget was $99,500,000. Next year you are projecting a program of $112,200,000. It is increasing substantially. You state that fiscal year 1969 funds are needed to maintain the current level of supporting research and technology. It looks like the same funds would give you the current level.

Dr. NAUGLE. Mr. Chairman, there are a couple of points I would like to note here. First of all, the overall Space Science and Applications budget is going down. We are about $176 million below what we were in 1966.

Mr. EVINS. We are speaking specifically to the space applications program, and this has increased.

Dr. NAUGLE. In the case of space applications, we feel that because of the demonstrated payoff that has come from the applications in meteorology, and because of the potential payoffs we see in the area of earth resources, this is an area where we should increase the effort at this time even though the overall space science and applications budget and the overall agency budget are going down. That is, we feel that this increase is necessary and justifiable even at this time.

TYPES OF SENSING DEVICES

Mr. EVINS. What are the remote sensing devices that you expect to develop in your 1969 program?

Dr. NAUGLE. With the portion associated with the earth resources program, we are developing sensors for multi-spectral cameras to take pictures of the surface of the earth using different colors, that is different parts of the electromagnetic spectrum. These could be used to identify crops, for instance, and similar techniques could be used to identify trees in the forest that are bad. We are using these funds to develop sensors of that nature. We are also using these funds to take these sensors, fly them in aircraft, and take pictures of what we call ground truth sights on the surface of the earth so that you can interpret accurately what you will see in a satellite photograph.

Mr. WEBB. Part of the work also, Mr. Chairman, is relating devices like side-looking radars and other newer types of equipment to these multispectral camera sensors, so that in a sense you can use a number of instruments at the same time and get an overview of a large area. I think the first benefit that will come from this work is the ability to coordinate, bring together, and form a judgment with respect to a large amount of data already accumulated on the ground over the years. Some of the geological formations that have been studied by the oil companies for years come into much sharper focus as to their relationship. Where decisions have to be made, this overview and the

ability to see the total relationship has proved to be of a very great value. Now, we are not fully informed on what individual companies are doing because this is a very new field, and there is a certain amount of proprietary knowledge here.

Mr. EVINS. There are seven or eight programs. The three that you are making major increases in are: Supporting research and technology for advanced studies, from $19,300,000 to $23,800,000, and the applications technology satellites, from $25,600,000 to $31,200,000. Then the earth resources survey increases from $5,300,000 to $12,200,000.

Couldn't you fund these at the same level as last year in view of the phrase in the justification, "Fiscal year 1969 funds are required to maintain the current level"?

Mr. WEBB. I believe these amounts should be approved. They offer not only developments in these new fields but also the leverage to make a great deal of previous work done over a number of years more valuable.

TIROS IMPROVEMENTS

Mr. EVINS. Tell us the objective of the Tiros.

Dr. NAUGLE. The Tiros improvements are part of a continuing program to improve the meteorological sensors. Out of that work has come the Tiros-M satellite. As you know the current ESSA satellites, are used to transmit and collect, on a global basis, the cloud cover and then will transmit it back.

NIMBUS OBJECTIVES

Mr. EVINS. What is the objective of your Nimbus program?

Dr. NAUGLE. We expect to develop instruments to measure the structure of the atmosphere. That is, at the present time the bulk of our operational meteorological data that we get from space is simply photographs of the clouds.

In order to truly give a long-range weather forecast we need to have what is called numerical data on the temperature, the pressure and the composition of the atmosphere as a function of altitude. We are developing in the Nimbus program sensors which will give us that information. That information is used together with computer systems and global coverage to provide the basis for long-range weather forecasting.

Mr. EVINS. Is it planned that ESSA will take over Nimbus?

Dr. NAUGLE. I think not, Mr. Chairman. I think we will continue to use Nimbus as a testbed to test out new sensors which will ultimately be incorproated into operational satellites that will be funded by ESSA. Nimbus is designed for that specific purpose.

Mr. WEBB. This is a continuing program, Mr. Chairman. There are six spacecraft in the program. We have already launched two. We are funding out of the 1968 funds the work forward to numbers E and F, which will be launched in 1971 and 1973. So in essence this $32,100,000 is an annual incremental funding on a six-spacecraft experimental program.

EARTH RESOURCES SURVEY PROGRAM

Mr. EVINS. What do you expect to achieve or accomplish in your earth resources survey? You are asking for $12,200,000.

Dr. NAUGLE. The major increase in the earth resources survey relate to two of the three efforts we have underway. One is the aircraft programs, which I mentioned, to test out sensors over ground truth sights. We are increasing that effort. That increase, which you see in the budget this year, is a one-time increase to equip an RB–57 aircraft for that work. Then we have $2 million for studies of an earth resources technology satellite, where the major question relates to how we would use the results that would come back; how to take the raw data that come back from the satellite, process it, and make it available so that it could be used by interested agencies such as the Department of Agriculture and the Department of Interior, to help solve the problems which they have.

Mr. WEBB. The RB–57 is being furnished to us without cost by the military. We are instrumenting it for this work. We need it because it can go to much higher altitudes than the airplanes we are presently using to test these equipments.

SENSING OF CROPS

Mr. EVINS. Do you detect crop yields from earth resources satellites?

Dr. NAUGLE. We have demonstrated that you can, by using these sensors that I talked about earlier, identify a field of wheat or a field of oats, so that using this you could get the total acreage in each.

Mr. EVINS. My question is: Could you project crop yields from a satellite?

Mr. WEBB. The trouble we are having is that the yield of a crop changes from time to time. Whether they have rainfall at the proper time or not is important. As you know from experience in Tennessee, if you get the rain at the right time the crop is good. If you do not get it at the right time it is not good. Now, what we are able to do is find out how much acreage is covered by a crop, then we are able to begin to assess whether the crop is in a healthy condition and will give an early yield. Now, this is in the early stage of development. But we are able to tell a good deal about the nutrition and the amount of moisture that the crop has received in relation to its needs.

Mr. EVINS. Have you made such reports and turned them over to the Department of Agriculture?

Mr. WEBB. No, sir. We are just developing the first experimental models of the instruments that will permit this to be done later.

Mr. EVINS. This is an objective or goal to be achieved, it has not been accomplished yet?

Mr. WEBB. That is correct.

Mr. SHAPLEY. But we are working together with the Department of Agriculture on this in a very close relationship.

JUSTIFICATION MATERIAL

Mr. EVINS. Place this schedule of launches into the record as shown on pages RD 45 and 46. Also include pages RD 9–1 through RD 9–13. (The pages follow:)

SCHEDULE OF LAUNCHES

SCHEDULE OF SIGNIFICANT RESEARCH AND DEVELOPMENT EVENTS

Project	Mission	Calendar year
Applications technology satellites	Launch of ATS–D	1968
	Launch of ATS–E	1969
	Launch of ATS–F	1972
	Launch of ATS–G	1973
International applications satellite	Launch of FR–2	1969
Geodetic satellites	Launch of GEOS–B	1968
	Launch of GEOS–C	1969
Nimbus	Launch of Nimbus B	1968
	Launch of Nimbus D	1970
	Launch of Nimbus E	1972
	Launch of Nimbus F	1973
TOS [1]	Launch of TOS E through H, refurbished prototypes P–1 and P–2, and ITOS A–E.	1968–71
Intelsat [2]	Launch of Intelsat II E	1968
	Launch of Intelsat III A–C	1968–69

[1] Funded by ESSA.
[2] Funded by the Communications Satellite Corp.

PROGRAM OBJECTIVES AND JUSTIFICATION

The objectives of the space applications program are to: (1) expand the knowledge of atmospheric and space phenomena; (2) conduct a broad program of research and technical development oriented toward the application of space techniques for the benefit of mankind; (3) develop and test procedures, instruments, subsystems, spacecraft, and interpretive techniques for the various applications; (4) fulfill NASA's responsibilities under the Communications Satellite Act of 1962; (5) develop and implement for the Environmental Science Services Administration (ESSA), Department of Commerce, the operational meterological satellite system; and (6) cooperate with other government agencies in the study and development of space technology related to the early realization of practical benefits, such as earth resources survey endeavors in areas of agriculture-forestry, hydrology-oceanography, geography-cartography, and geology mineralogy through periodic systematic surveys of earth resources.

Many countries throughout the world have traditionally looked to the United States for economic, scientific, and technological leadership. One of the significant ways in which this leadership can be demonstrated is through a comprehensive space applications program. The space applications program effort is directed toward research, development, and flight test in the discipline areas of applications technology, communications, earth resources, geodesy, meteorology, and navigation and includes implementation of operational systems, as appropriate. Current satellite flight projects include Tiros, Nimbus, applications technology and geodetic satellites. Fiscal year 1969 effort includes feasibility, definition, and design studies for an earth resources technology satellite. Applications technology satellites offer great potential to mankind by developing and extending technology commonly required for all types of applications. Communications satellites offer the possibility of broadcast to all or parts of the world by economical means. Geodetic satellites offer the means to determine the size and shape of the earth and the vector properties of its gravitational field. Meteorological satellites provide the capability to improve weather prediction on a global basis, and increase our knowledge of the atmosphere. Earth resources satellites provide the means to obtain valuable data in such areas as agriculture-forestry, geology-mineralogy, hydrology-oceanography, and goegraphy-cartography. Navigation satellites provide location, traffic control, search and rescue, and communications systems for aircraft and ships.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology/advanced studies	$11,030,000	$19,300,000	$23,800,000
TIROS/TOS improvements	1,292,000	9,100,000	5,800,000
Nimbus	24,410,000	33,700,000	32,100,000
Meteorological soundings	2,855,000	3,000,000	3,000,000
International applications satellite	100,000	100,000	100,000
Applications technology satellites	30,013,000	25,600,000	31,200,000
Geodetic satellites	1,600,000	3,400,000	4,000,000
Earth resources survey		5,300,000	12,200,000
Aircraft program		(5,300,000)	(10,200,000)
Earth resources technology satellite			(2,000,000)
Total	71,300,000	99,500,000	112,200,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Manned Spacecraft Center		$6,100,000	$11,400,000
Marshall Space Flight Center	$280,000	300,000	400,000
Goddard Space Flight Center	65,210,000	78,300,000	79,500,000
Jet Propulsion Laboratory	321,000	100,000	
Wallops Station	240,000	400,000	200,000
Ames Research Center	100,000	100,000	100,000
Electronics Research Center	1,230,000	1,800,000	2,600,000
Langley Research Center	905,000	800,000	700,000
Lewis Research Center	312,000	1,400,000	1,400,000
NASA Headquarters	2,702,000	10,200,000	15,900,000

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY/ADVANCED STUDIES

	1967	1968	1969
Applications technology	$1,226,000	$1,400,000	$1,900,000
Communications	2,618,000	3,200,000	4,200,000
Earth resources		7,700,000	8,700,000
Geodesy	450,000	1,000,000	1,800,000
Meteorology	5,761,000	5,000,000	5,800,000
Navigation	975,000	1,000,000	1,400,000
Total	11,030,000	19,300,000	23,800,000

Supporting research and technology in space applications covers an extremely wide range of activity from the broad spacecraft technology focusing on advancement in spacecraft stabilization methods, high pointing accuracy, higher power, long lifetime, and data-handling capability to the more specific items such as sensors and instrumentation study and design. These efforts form the scientific and technological basis for present and future applications and missions.

The discipline areas of applications are: Applications technology communications, earth resources, geodesy, meteorology, and navigation.

Efforts in fiscal year 1967 for applications technology continued in the area of attitude measurement such as starfield readers, radio frequency (RF) sensors, and non-RF sensors; and control devices such as gravity gradient components, momentum wheels, and small thrusters. Effort also continued on the design and preliminary development of a spaceborne millimeter propagation experiment. Funds in fiscal year 1968 are being used for control systems studies directed at stabilization of spacecraft in orbit; spacecraft equipment developments to improve RF amplification and antenna system capabilities and to increase the reliability and useful lifetime of satellite elements. Studies will be continued on long-life fully stabilized spacecraft having improved large space erectable antenna with greater pointing accuracy. Active and hybrid gravity gradient stabilization control systems analysis will be continued. A feasibility study is

planned on a unified space applications mission satellite, which will examine multi-disciplinary applications missions in terms of the trade-offs relative to type of sensors and experiments, orbital characteristics, and spacecraft technology. In fiscal year 1969, efforts will continue in the development of new control systems and initiation of effort on a hydrazine control system. Development of components and subsystems will continue with new effort being initiated on a unified S-band transponder. Also, it is planned to initiate studies for the evaluation of educational TV satellite potential and the definition of industry requirements of satellite applications.

In communications, fiscal year 1967 and prior year investigations had been conducted on satellite systems capable of linking terminals of greatly reduced size, making possible communications with low capacity mobile and fixed stations. Investigations continued on the effect of scattering electromagnetic waves by earth's atmosphere and space environment and the determination of mutual interference between space and terrestrial communication systems. Fiscal year 1968 effort is primarily in the active satellite area, including evaluation and assessment of components and subsystems required for broadcast applications; propagation studies and component development in the frequency region between 10 to 100 GHz where frequencies are more available for space communications, but much less understood; and interference analysis and prediction methods needed for developing frequency sharing criteria. A feasibility study will be conducted to determine satellite system concepts and approaches to provide wide-band communications between orbiting spacecraft and earth terminals via satellite relays. Efforts in fiscal year 1969 will continue the evaluation and development of components and subsystems for communications satellites. Continued efforts will be made to optimize the utilization of the frequency spectrum. Systems analysis and technological studies will be conducted on: data dissemination by satellite, the potential of TV broadcast satellites, and the relationship of communication satellites to common carrier systems for mass communications dissemination.

Earth resources effort in fiscal year 1967 was funded from the Apollo applications program. Feasibility studies were conducted to define the potential for using remote sensing technology in detecting, measuring, and mapping earth resource phenomena from space. Studies have been conducted in coordination with user agencies to determine the capability of remote sensing devices for obtaining data relevant to the fields of agriculture, forestry, geography, cartography, geology, hydrology, and oceanography. Two NASA aircraft equipped with experimental sensors gathered data over selected test sites in support of feasibility studies to assess potential space applications. The aircraft acquired data, as well as data from Gemini, Tiros, and Nimbus were distributed to the investigators for analysis. The Departments of Agriculture, Interior, Commerce, and Navy are participating in this multi-discipline research. Fiscal year 1968 funds are being used for studies to define earth resources sensor configurations for space flights. In addition, in coordination with user agencies, studies are being conducted on processing and dissemination of space acquired data, ground truth investigations and space mapping, in oceanography and in the development of agricultural signatures for identification and analysis of crop species. In fiscal year 1969, participating agencies will continue their efforts to define requirements for space missions. Development of interdisciplinary instrumentation will continue with emphasis on the determination of requirements for future instruments beyond those presently required by user agencies. Additional studies will be performed to assess the relationship and requirements of earth resources satellites for the areas of oceanography, forestry, urban and rural development, agriculture, petroleum and mining, water resources, and other earth resources program potential.

Geodesy efforts in fiscal year 1967 and fiscal year 1968 consisted of (1) conceptual studies, feasibility analysis, and configuration definition of geodetic spacecraft, (2) analysis of geodetic requirements in terms of spacecraft mission and instrumentation configuration, (3) analysis of feasibility and effectiveness of accurately located ground-based spacecraft observation systems, and of data analysis techniques for active and passive geodetic satellites, and (4) research into geodetic effectiveness and feasibility of techniques, to calibrate geodetic observation methods intended for extraterrestrial use. In fiscal year 1969, existing studies will be continued and new effort initiated to determine the data requirements for ship positioning, continental drift, and the relationship of

satellite and surface gravity measurements. Investigations will also be conducted to determine the potential of using satellites for marine geodesy and to assess advanced geodetic satellite applications.

In meteorology, fiscal year 1967 and prior year funds were utilized for developing and evaluating components for potential meterological satellite system applications: design and development of satellite sensors for the detection and controlled acquisition of meterological data directly from the atmosphere, investigation of scientific techniques for the systematic observation, analysis and interpretation of meterological atmospheric phenomena; and system analysis and exploration of the atmosphere. Fiscal year 1968 funds are being used primarily for the development of improved satellite subsystems and components and the identification and development of advanced sensors. Improvement efforts include the spaceborne medium size memory, on-board data processing systems, interferometer development, power and attitude control systems, tape recorder optimization, and solar array drive and positioning. Identification and development of advanced sensors include the test and evaluation of various meterological experiments on rockets and aircraft, advanced studies on radiation data, the development of radiometric inversion techniques for inferring atmospheric structure, and research in millimeter techniques for remote sounding. In fiscal year 1969, the effort will be continued in the area of improved subsystems and components and advanced sensors for synchronous and non-synchronous altitude satellites. In addition, studies will be conducted on the utilization of meterological data obtained from synchronous satellites, determination of the requirements for air and water pollution sensors and subsystems, and the quantitative data requirements for advanced atmospheric models.

Navigation and traffic control satellite system conceptual studies conducted in fiscal year 1967 and prior years indicated that satellites could assist overocean aircraft and ships to obtain more precise position information under all weather conditions, and could aid air-sea traffic control and coordination of rescue operations. In fiscal year 1968, navigation and traffic control effort included studies and experiment development on data and voice transmission via satellite to ships, aircraft, and other mobile platforms; position determination techniques; and studies of future navigation and traffic control satellite concepts. In fiscal year 1969, effort on these studies and experiment development will continue. Studies will also be initiated to assess the socioeconomic-political implications of navigational satellites; to determine user agency requirements for navigational aids, search and rescue techniques, and data on transportation hazards.

TIROS/TOS IMPROVEMENTS

	1967	1968	1969
TIROS M spacecraft	$847,000	$7,400,000	$3,300,000
TOS improvements	445,000	1,700,000	2,500,000
Total spacecraft and support	1,292,000	9,100,000	5,800,000
Delta (launch vehicle procurement program)		(800,000)	
Total (including launch vehicles)	(1,292,000)	(9,900,000)	(5,800,000

Nine Tiros research and development spacecraft funded by NASA, and seven operational spacecraft, based on the Tiros configuration, funded by ESSA, have been successfully launched. In response to the requirements of ESSA for an early day-night capability in a single spacecraft, NASA initiated design study effort in fiscal year 1966 for a spacecraft designated Tiros M. This spacecraft, scheduled for launch in 1969, will contain two advanced vidicon camera systems (AVCS), two automatic picture transmission (APT) systems, two high resolution radiometer (HRR) systems and secondary sensors, which consist of a flat plate radiometer to map the earth's heat budget and a solar proton monitoring instrument. Tiros operational system (TOS) acquisition stations at Wallops Island, Virginia, and Gilmore Creek, Alaska, will be used. Data will be utilized by the Goddard Space Flight Center (GSFC), ESSA and cooperating Government and non-Government meterological organizations. The configuration flight tested by Tiros M will be used in the future improved TOS spacecraft funded by ESSA. The TOS improvement program provides for the research and development of components and subsystems for meeting the evolutionary re-

quirements of the TOS system. These requirements are increased reliability, extended life, expanded sensor capability, and improved operational capability. Efforts currently being undertaken include the improvement of vidicon cameras, radiometers for higher resolution day-night coverage, sensors for vertical profile measurements, improved attitude determination subsystems, onboard orbit correction subsystems, and improved ground station systems.

The Office of Space Science and Applications is responsible for the overall management of this project. Responsibility for project management is assigned to the Goddard Space Flight Center. The major spacecraft contractor is Radio Corporation of America.

Fiscal year 1966 and prior year NASA funds for Tiros I through IX, Tiros M, and TOS improvements, including launch vehicles, amounted to $56.6 million. Fiscal year 1967 funds were utilized to initiate hardware procurement for the Tiros M spacecraft and for TOS sensors development. Fiscal year 1968 funds are being used to continue these efforts. Fiscal year 1969 funds are required to complete the Tiros M spacecraft and sensors; for integration, test, and launch of the Tiros M spacecraft; and to continue funding the TOS improvement efforts. Subsequent funding requirements for Tiros M are estimated at $1.5 million for completion of funding on the prime spacecraft contract. TOS improvement effort will continue at the level of about $2.5 million per year.

NIMBUS

	1967	1968	1969
Spacecraft	$14,152,000	$18,100,000	$18,000,000
Experiments	8,261,000	13,400,000	12,100,000
Ground operations and support	1,997,000	2,200,000	2,000,000
Total	24,410,000	33,700,000	32,100,000
TAT-Agena (launch vehicle procurement program)	(2,330,000)	(3,036,000)	(3,638,000)
Total (including launch vehicles)	(26,740,000)	(36,736,000)	(35,738,000)

The objectives of Nimbus are: (1) to develop an improved meteorological satellite to provide data for use by the scientific community, (2) to carry out flight tests to prove the applicability of the instrumentation, (3) to fulfill special data requirements of the atmospheric sciences research community which can be provided uniquely by this instrumentation functioning as a space meteorological observatory, and (4) to provide the basis for further significant technological advances in meteorological satellites for scientific and operational uses. The Nimbus concept features (1) orientation—the space craft stabilized in three axes and pointing to the earth at all times, (2) coverage—the polar orbit enables the spacecraft sensors to provide daily global coverage, and (3) capacity—the spacecraft configuration allows for test of a sizable number of relatively advanced observational sensors and experiments.

The project consists of six spacecraft of which two have been launched, Nimbus I, August 28, 1964, and Nimbus II, May 15, 1966. These launches have validated the Nimbus concept of testing a variety of advanced sensors on a stabilized earth oriented spacecraft. Nimbus B and D are currently under development for launch in 1968 and 1970, respectively, to test a variety of additional advanced meteorological experiments.

Nimbus B will test such sensors as: (a) infrared interferometer spectrometer (IRIS), (b) interrogation, recording, location system (IRLS), (c) medium resolution and high resolution infrared radiometer (HRIR), (d) a satellite infrared spectrometer (SIRS), (e) an image dissector camera system (IDCS) to provide daytime TV pictures of cloud cover. Nimbus D will test such sensors as (1) an improved infrared interferometer spectrometer (IRIS), (2) an improved satellite infrared spectrometer (SIRS), (3) a filter wedge spectrometer (FWS) to monitor water content of the atmosphere, (4) a temperature/humidity infrared radiometer (THIR), and (5) an improved interrogation, recording and location system (IRLS). Effort is being initiated in fiscal year 1968 on development of Nimbus E and F scheduled for launch in 1972 and 1973, respectively, to test additional experiments to further extend the technology advancements in meteorological satellites for scientific and operational purposes utilizing spacecraft of greater weight and power capability.

The Office of Space Science and Applications is responsible for overall management of the Nimbus project. Responsibility for project management is assigned to Goddard Space Flight Center. The major contractors for the Nimbus A–D missions are General Electric for integration and test of the spacecraft and for the controls subsystems and the Radio Corporation of America for camera, power, and data storage subsystems. Major contractors for the Nimbus E and F spacecraft, experiments, and subsystems have not yet been selected.

Fiscal year 1966 and prior years funds, including launch vehicles, amounted to $136.5 million. Fiscal year 1967 funds were utilized to continue development of Nimbus B spacecraft and experiments, initial procurement on long lead hardware items for Nimbus D and continued data handling of Nimbus II. Fiscal year 1968 funds are being utilized for completion, integration, and launch of the Nimbus B spacecraft, continued development of Nimbus D spacecraft and experiments, and for final definition and initial experiment development effort for Nimbus E and F, and continued data handling for Nimbus II and for Nimbus B after launch. Fiscal year 1969 funds are required to continue the development of Nimbus D, E, and F spacecraft and experiments and continued data handling from missions in orbit. Subsequent years funding requirements for this project, including launch vehicles, are estimated to be $82.3 million.

METEOROLOGICAL SOUNDINGS

	1967	1968	1969
Large research sounding rockets	$1,920,000	$2,020,000	$2,070,000
Sounding rocket system development	630,000	750,000	700,000
Field experiment support	305,000	230,000	230,000
Total	2,855,000	3,000,000	3,000,000

The objectives of the meteorological sounding project are: (1) to determine the structure and characteristics of the atmosphere in the region 20 to 60 miles above the earth through the use of research and development type sounding rockets, and (2) to develop a meteorological sounding rocket system amenable to research, range support, and supporting operational requirements. To accomplish these objectives, three areas of effort are involved: (1) development and use of large sounding rockets to explore atmospheric characteristics in the region of 30–60 miles above the earth, (2) design and test of small sounding rocket systems to obtain data from the region 20–40 miles above the earth, and (3) participate in conducting sounding rocket experiments in cooperation with other countries on a cost-sharing basis.

The Office of Space Science and Applications is responsible for the overall management of the project. Project management for large research rockets is assigned to Goddard Space Flight Center, for small developmental rockets to Langley Research Center, and for the field experiment support to Goddard Space Flight Center and Wallops Station.

Fiscal year 1966 and prior-year funding amounted to $9.2 million, of which $7.4 million was utilized for large research rockets, $1.6 million for small rocket development, and $.2 million for field experiment support. Approximately 50 large research rockets and 100 to 150 small developmental sounding rockets are launched each year. Funds for fiscal year 1967 were utilized for launch of large research and small developmental sounding rockets, flight test of various payload components, research for system improvements and for initiation of the international cooperative field experiment project with Argentina. Funds for fiscal year 1968 are being utilized to launch additional large research rockets and small developmental sounding rockets; development and improvement of sounding rocket systems; continuation, extension, and development of field experiment projects jointly with countries in South America, Europe, and Asia, to study and observe the upper atmosphere through the coordinated launches of small developmental sounding rockets.

Fiscal year 1969 funds are required to provide for the launch of approximately 50 large research rockets to continue study of the relationship of the atmospheric structure in the arctic, subarctic, midlatitudes, and the tropics during various seasons; for launch of about 150 small development sounding rockets; flight test of various payload components; research to improve rocket performance; and

the continuation and development of the field experiment projects with other cooperating countries. Subsequent-year funding requirements will continue at about the level of $3 million per year.

INTERNATIONAL APPLICATIONS SATELLITE

	1967	1968	1969
Spacecraft and support	$100,000	$100,000	$100,000
Scout (launch vehicle procurement program)	(.....)	(.....)	(3,000,000)
Total (including launch vehicles)	(100,000)	(100,000)	(3,100,000)

This project was entitled "French Satellite" in the fiscal year 1968 budget. It is a cooperative project with France and consists of a space meteorology experiment involving the use of free-floating balloons and an earth-orbiting satellite. The experimental data will provide the velocity of airmasses at various altitudes, and assist in gaining a better understanding of the atmospheric structure.

France will (*a*) design, develop, and launch balloon payloads equipped to gather meteorological data in conjunction with an earth-orbiting spacecraft, (*b*) design and develop the spacecraft, and (*c*) provide ground operational support including spacecraft checkout, tracking, data acquisition, and analysis. NASA will (*a*) provide the launch vehicle, backup vehicle if required, and launch services, (*b*) provide technical assistance, and (*c*) assist in data acquisition and analysis.

The Office of Space Science and Applications is responsible for the overall management. Responsibility for project management is assigned to Goddard Space Flight Center.

This project was initiated in fiscal year 1967. Fiscal year 1967 funds were utilized for spacecraft and balloon subsystems studies. Fiscal year 1968 funds are being used to continue this effort including the analysis of balloon and spacecraft antenna, electronics, balloon position-fixing techniques, and general project support. Fiscal year 1969 funds will be required to continue this effort and for procurement of the launch vehicles and services. Funding requirements for future years for this project are estimated to be about $0.2 million.

APPLICATIONS TECHNOLOGY SATELLITES

	1967	1968	1969
Spacecraft	$15,413,000	$10,900,000	$15,300,000
Experiments	13,400,000	13,200,000	13,100,000
Operational support	1,200,000	1,500,000	2,800,000
Total	30,013,000	25,600,000	31,200,000
Atlas Agena and Atlas Centaur (launch vehicle procurement program)	(17,856,000)	(10,301,000)	(4,200,000)
Total (including launch vehicles)	(47,869,000)	(35,901,000)	(35,400,000)

The objectives of the applications technology satellites project are to design, develop, flight test, and evaluate a variety of experiments in the space applications disciplines by use of a series of spacecraft, most of which are launched into synchronous orbits. Seven spacecraft are in the series, of which three have been launched to date, one into medium altitude and two spin-stabilized spacecraft into synchronous orbit. Four additional spacecraft are scheduled for launch in the 1968–73 period utilizing Atlas Centaur launch vehicles. The launch of ATS–A into medium altitude was largely unsuccessful due to failure to obtain the circular orbit required. Applications technology satellites B and C have successfully demonstrated the feasibility of a variety of experiments at synchronous altitude such as black and white and color cloud-cover pictures from synchronous altitude, very high frequency communication experiments with aircraft, and a number of environmental measurement experiments. Applications technology satellites D and E scheduled for launch in 1968 and 1969, respectively, will test new and additional space applications experiments at synchronous altitude using gravity-gradient-stabilized spacecraft. Applications tech-

nology satellites F and G are scheduled for launch in the 1972–73 period to flight test a 30-foot space-erectable parabolic antenna; accurate, long-life stabilized system; precision radio-interferometer; and other applications and scientific experiments which are to be selected.

Included in this project are efforts on development of additional advanced applications flight experiments in the discipline areas of meteorology, broadcast and program distribution, data collection and relay, navigation and traffic control, and geodesy. These experiments will be incorporated into the appropriate ATS spacecraft for flight testing.

The Office of Space Science and Applications is responsible for overall management. Responsibility for project management is assigned to Goddard Space Flight Center. The major contractors for the first five ATS missions are Hughes Aircraft Co., for spacecraft development, and General Electric Corp., for gravity gradient stabilization system development. Contractors for the F and G are being selected in fiscal year 1968.

Fiscal year 1966 and prior year funding for this project, including launch vehicles and meteorological flight experiments, amounted to $90.1 million. Fiscal year 1967 funds were used to cover the first two launches and continued development on the subsequent three spacecraft and experiments. Fiscal year 1968 funds are being utilized to launch the third spacecraft and continue the development of ATS D and E and initiate the development of ATS F and G. Fiscal year 1969 funds are required to continue development of the four spacecraft (D through G), experiments, and ground operational support of the missions in orbit, and several advanced applications experiments. Subsequent funding for this project, including launch vehicles is estimated to be $118.5 million.

GEODETIC SATELLITES

	1967	1968	1969
Spacecraft and support	$1,600,000	$3,400,000	$4,000,000
Thor Agena and Delta (launch vehicle procurement program)	(.....)	(700,000)	(4,300,000)
Total (including launch vehicles)	(1,600,000)	(4,100,000)	(8,300,000)

The objectives of this program are to conduct geodetic satellite measurements on a global scale. This, in conjunction with astrogeodetic, surface base-line, and gravity data available from other sources, will result in: the establishment of a unified world datum in a geocentric coordinate system to which the major world data will be connected; the definition of the structure of the earth's gravitational field and refinement of the locations and magnitudes of large gravity anomalies; the improvement of the positioning accuracy of tracking sites and the location of isolated islands; and an evaluation and correlation of the results obtained from the geodetic instrumentation and techniques utilized.

The geodetic satellite project consists of four flight missions, namely: (1) GEOS–I (GEOS–A) successfully launched on November 6, 1965, (2) PAGEOS–I successfully launched on June 23, 1966, (3) GEOS–B, scheduled for flight in early 1968, which is structurally similar to GEOS–I and will contain flashing lights, minitrack beacon, doppler beacon transmitters, range and range rate, SECOR and C-band transponders, and optical reflectors for laser tracking and (4) GEOS–C, scheduled for flight in 1969. GEOS–C, structurally similar to both GEOS–I and GEOS–B, is the back-up spacecraft for GEOS–B, and will be flown at an inclination and altitude required for supplying the data to complete a unified world datum and improve the location of the tracking stations if GEOS–B is successful. GEOS–C will carry the same basic instrumentation as GEOS–I and B plus instrumentation designed to obtain highly precise data measurements.

The Office of Space Science and Applications is responsible for the overall management of GEOS.

Fiscal year 1966 and prior year funding including launch vehicles, amounted to $23.5 million. Fiscal year 1967 funds were utilized for continued development of GEOS–B spacecraft and for continued data acquisition and analysis from GEOS–I. Fiscal year 1968 funds are being utilized to complete GEOS–B spacecraft data acquisition and analysis, provide systems engineering, and ground support for GEOS–B launch and commencement of development of GEOS–C.

Fiscal year 1969 funds are for continued GEOS–B data acquisition and analysis, GEOS–C (GEOS–B back-up) spacecraft development, and ground operational support. Funding requirements for future years, including launch vehicles are estimated to be $7.4 million.

EARTH RESOURCES SURVEY

	1967	1968	1969
Aircraft program		$5,300,000	$10,200,000
Earth resources technology satellite			2,000,000
Total		5,300,000	12,200,000

This project consists of two activities in the earth resources discipline, as follows: (1) an aircraft program to develop and test remote sensing techniques, sensors, and data handling systems, and (2) feasibility, definition, and design studies pertaining to an earth resources technology satellite.

The objectives of the aircraft program are (1) to conduct feasibility studies and program definitions on testing of sensors and data collecting techniques for earth resources, (2) to design, develop, and flight test these equipments, and (3) to conduct aircraft flights over selected test sites to evaluate the performance of the sensing equipment and to obtain significant data in the discipline areas of agriculture-forestry, geography-cartography, oceanography-hydrology, and geology-mineralogy.

This effort was conducted in fiscal year 1967 in supporting research and technology (S.R. & T.) funded from Apollo applications and included in the space applications program effective with fiscal year 1968. The fiscal year 1967 and 1968 effort consisted of studies in the areas of program definition, feasibility, and potential benefits to the national interest and mankind in the disciplines cited above. This effort also included instrumentation development, and integration of experiments and sensors into a Convair 240A and a Lockheed P–3A aircraft for flight over specified test sites to gather fundamental data in the various earth resources disciplines. In fiscal year 1968, the Convair 240A is being replaced with another P–3A. These instrumented aircraft gather, for example, such basic data as (1) soil types, crop conditions, environmental conditions, and so forth, in the case of agriculture; (2) tree identification, forest density, forest conditions, and so forth, in the case of forestry; and (3) water densities, temperatures, currents, and so forth, in the case of oceanography. In addition to gathering significant data, the aircraft program serves as a test bed for acquiring the skills in handling and interpreting the data obtained and in gaining valuable design experience in the pursuit of more sophisticated instrumentation required for future satellite missions.

The objectives of the earth resources technology satellite (ERTS) effort are to conduct feasibility, definition, and design studies of a satellite containing a variety of sensors capable of obtaining fundamental experimental data in the earth resources disciplines. Analysis of these data would locate, identify, and assess many earth resources phenomena. In agriculture and forestry for example, crop growth area, forest area, brush-range land interface, crop yield, and damage assessment data could be obtained by an earth resources technology satellite. The Departments of Agriculture, Commerce, Interior, and the U.S. Naval Oceanographic Office have participated in a cooperative program with NASA to identify uses and assess the value of space acquired data when applied as improvements to functions for which they have responsibility.

The Office of Space Science and Applications is responsible for the overall management of this project. Responsibility for project management of the aircraft program is assigned to Manned Spacecraft Center. A field center has not yet been designated for the earth resources technology satellite study effort.

Fiscal year 1969 funds are required for instrumentation development for a high-altitude aircraft; operational support for two P–3A's and the high-altitude aircraft; and for data acquisition, analysis, and utilization, in the aircraft program; and in earth resources technology satellite activity to conduct feasi-

bility, definition, and design studies for a satellite system. These endeavors will be coordinated with user Government agencies. Funding requirements for future years for the aircraft program are estimated to be about $5.5 million per year.

Sustaining University Program

Mr. Evins. Take a look at your sustaining university program, $31 million in 1967, $10 million in 1968, and you project $10 million for 1969, the same level. Place pages RD–47 and RD–48 into the record.

(The pages follow:)

Summary

Program objectives and justification

NASA depends upon universities to supply research expertise and competence essential to the space effort, and the particular needs of the agency. University scientists conceive and develop experiments contributing to new scientific knowledge; do research in areas directly related to manned and unmanned space science; serve on space advisory planning and evaluation groups; and train scientists, engineers, and managers for the space program. By their participation, universities gain new knowledge and experience necessary to their own advancement and the advancement of nonspace related technology. The nature of NASA's relationships with universities changes somewhat from time to time to meet changing needs, but regardless of the level or direction of the Nation's space program, universities must be an essential part of it. Most of NASA support to universities is through the agency program offices and centers which deal directly with university scientists and engineers in carrying out specific research and development projects. However, many needs fall outside the interest of these offices and must be met by the sustaining university program. These include sustaining research on subjects broader in scope than the responsibilities of any other NASA office, training of graduate students in disciplines which represent particular NASA needs, special training for senior faculty members in space research and engineering systems design.

SUMMARY OF RESOURCES REQUIREMENTS
[In thousands of dollars]

	1967	1968	1969
Training	$16,000	$3,000	$3,000
Research	11,000	7,000	7,000
Research facilities	4,000	----------	----------
Total	31,000	10,000	10,000

Basis of fund requirements

Training

As the national space effort attains its mission objectives, training activities under NASA's Sustaining University program are continuously reviewed and reassessed to insure compatibility with new conditions and tasks the Agency will encounter in ensuing years.

In fiscal year 1969, $3 million is requested for training, $1.5 million of which will be allocated to predoctoral training in systems engineering design and public administration and the other $1.5 million to special summer training programs. The predoctoral training programs have been established so that senior faculty members and graduate students may use NASA installations in which to study problems which are relevant to NASA needs while helping to strengthen the graduate programs at their universities.

NASA's special training opportunities include a summer faculty fellowship program which helps young faculty members keep abreast of the latest developments in science and engineering; a faculty fellowship program in systems engineering design which brings together faculty members from different engineering disciplines to work on broad space related problems requiring a team approach; summer institutes for upper division undergraduates to familiarize them with space science and engineering problems; and post-M.D. training in aerospace medicine for a few very select medical doctors in preparation for direct or supporting careers in manned space flight activities.

Research

Through the research element of the Sustaining University program, NASA is able to support high priority programs that are broader and longer range than mission oriented project research. Here a multidisciplinary approach to research is stressed and the participating universities have authority and flexibility to assess and meet Agency needs. Particular emphasis is placed on multidisciplinary studies in social, economic, and public policy aspects of scientific and technical developments and projects closely related to NASA center research. This program balances and complements NASA's project research and flight experiments.

With a budget of $7 million in fiscal year 1969, the research element of the Sustaining University program will support multidisciplinary programs at 35 universities. This number is down from the 44 institutions funded in fiscal year 1968 and 50 universities in the program in fiscal year 1967.

Research Facilities

Under a period of declining budget, NASA has established priorities for the elements of the Sustaining University program, and no fiscal year 1969 funds are requested for construction of university research laboratory facilities on university campuses.

Mr. EVINS. You say in 1969, $3 million is required for training, of which $1.5 million is for predoctoral training in systems engineering design and public administration, and the other $1.5 million is for special summer training programs. This is a very good program, it brings in new skills and additional trained people. We are funding it at about $10 million, although the National Science Foundation is trying to fund training in all phases with half a billion dollars.

Mr. WEBB. We have Assistant Administrator Francis B. Smith here.

Mr. EVINS. Tell us the total number of contracts and support with the universities.

Mr. WEBB. Mr. Smith.

NUMBER OF UNIVERSITIES SUPPORTED

Mr. SMITH. We are supporting about 200 universities in round numbers, throughout the nation.

The 200 universities have among them about 1,750 grants or contracts.

Mr. EVINS. 200 universities and 1,750 grants.

Mr. SMITH. This is in NASA's total program.

Mr. EVINS. We are talking about the Sustaining University program now.

Mr. SMITH. Within the Sustaining University program, to which the $10 million amount applies, there are about 60 universities.

Mr. EVINS. About 60 universities?

Mr. WEBB. And that is down from about 150. It was about 150 and has been reduced to 60.

Mr. EVINS. We understand it has been reduced. We are just trying to get this information on the record. People will read this record and others will ask questions about it. Don't be modest about it, speak up, tell us about it.

TYPES OF GRANTS

Mr. SMITH. There are about 60 universities. There are two or three kinds of grants. Most of them are research grants. Some of them, particularly in management, administration, engineering systems and design, are combinations of research and training where we support a few predoctoral students in specific subjects. In each of those special cases a Memorandum of Understanding has been signed with the university, which very clearly sets out what NASA and what the university intend to accomplish in that grant.

Mr. TALCOTT. Was the reduction in the number of universities receiving grants an effort to direct your money to the better universities?

Mr. SMITH. No, not specifically. This was largely a reduction in our training program. There are several reasons for that, the primary one being that NASA no longer has an expanding program. Our program is now decreasing; we are supporting fewer and fewer scientists and engineers rather than more and more as we were in 1962. So that is a part of our program that has been reduced greatly.

Mr. TALCOTT. Is the Federal money that you are granting or loaning now going to the better universities that can produce more toward the accomplishment of your goals?

Mr. WEBB. In a sense, Mr. Talcott, what we have done, as the program has been reduced from $46 million to $10 million a year, is to stop certain types of grants. We are introducing no predoctorals generally for addition to the national pool, but we are furnishing predoctorals in some experimental courses in team training and engineering, for instance, where a group of masters and doctoral candidates will work with the faculty to design a radar to be used on the surface of the moon, so they have to work on practical problems of the kind we have to deal with, and the faculty is also engaged in basic research and engineering, which is a considerably neglected field in this country. We have done the same in management. In essence, we are not adding predoctorals in the general area, and this accounts for substantial reductions in the universities.

UNIVERSITIES PARTICIPATING IN SUSTAINING UNIVERSITY PROGRAM

Mr. TALCOTT. Could you list the universities that are benefiting from this program?

Mr. WEBB. Yes, sir. We will be glad to do that.

(The information follows:)

The universities involved in engineering systems design are: Cornell University, Georgia Institute of Technology, Purdue University, Stanford University, and University of Kansas. The following list shows the universities which have or will receive fiscal year 1968 Sustaining University Program funds along with the other 94 which are operating on funds commited in earlier years.

UNIVERSITIES PARTICIPATING IN THE NASA SUSTAINING UNIVERSITY PROGRAM

Those 60 universities marked with an asterisk have or will receive new Sustaining University Program funds in fiscal year 1968.

No new funds will be committed to the other 94 universities in fiscal year 1968.

Adelphi University
*Alabama, University of
Alaska, University of
Alfred University
Arizona State University
*Arizona, University of
Arkansas, University of
*Auburn University
Baylor University
Boston College
Boston University
Brandeis University
Brigham Young University
Brooklyn, Polytechnic Institute of
*Brown University
*California Institute of Technology
*California, University of, at Berkeley
*California, University of, at Los Angeles
California, University of, at Riverside
California, University of, at San Diego
*California, University of, at Santa Barbara
Carnegie-Mellon University
*Case-Western Reserve University
*Catholic University of America
Chicago, University of
*Cincinnati, University of
Clark University
Clarkson College of Technology
Clemson University
Colorado School of Mines
*Colorado State University
Colorado, University of
*Columbia University
Connecticut, University of
*Cornell University
Dartmouth College
Delaware, University of
Denver, University of
Drexel Institute of Technology
*Duke University
Duquesne University
Emory University
Florida State University
*Florida, University of
Fordham University
*George Washington University
Georgetown University
*Georgia Institute of Technology
Georgia, University of
Harvard University
Hawaii, University of
*Houston, University of
*Howard University
Idaho, University of
Illinois Institute of Technology
Illinois, University of
Indiana University
Iowa State University
Iowa, University of
Johns Hopkins University
Kansas State University
*Kansas, University of
Kent State University
Kentucky, University of
Lehigh University
*Louisiana State University
*Louisville, University of
Lowell Technological Institute
*Maine, University of
Marquette University
*Maryland, University of
*Massachusetts Institute of Technology
Massachusetts, University of
*Miami, University of
Michigan State University
Michigan Technological University
Michigan, University of
*Minnesota, University of
Mississippi State University
Mississippi, University of
*Missouri, University of
Missouri, University of, at Rolla
*Montana State University
Montana, University of
Nebraska, University of
Nevada, University of
New Hampshire, University of
*New Mexico State University
*New Mexico, University of
*New York, The City University of
New York, State University of, at Buffalo
*New York, State University of, at Stony Brook
*New York University
North Carolina State of the University of North Carolina
North Carolina, University of
North Dakota State University
North Dakota, University of
*Northeastern University
Northwestern University
Notre Dame, University of
*Ohio State University
Ohio University
*Oklahoma State University
*Oklahoma, University of
*Old Dominion College
Oregon State University
*Pennsylvania State University

Pennsylvania, University of
*Pittsburgh, University of
Princeton University
*Purdue University
Rensselaer Polytechnic Institute
Rhode Island, University of
*Rice University
Rochester, University of
Rutgers—The State University
St. Louis University
South Carolina, University of
South Dakota, University of
*Southern California, University of
Southern Illinois University
*Southern Methodist University
Southern Mississippi, University of
*Southwest Center for Advanced Studies
*Stanford University
Stevens Institute of Technology
*Syracuse University
Temple University
*Tennessee, University of
*Texas A&M University
Texas Christian University
Texas Technological College
Texas, University of
Toledo, University of
Tufts University
Tulane University
Utah State University
Utah, University of
Vanderbilt University
*Vermont, University of
Villanova University
*Virginia Polytechnic Institute
*Virginia, University of
Washington State University
*Washington University (St. Louis)
Washington, University of
Wayne State University
*West Virginia University
*William and Mary, College of
*Wisconsin, University of
Worcester Polytechnic Institute
Wyoming, University of
*Yale University
*Yeshiva University

Space Vehicle Systems

Mr. Evins. Take a look at the space vehicles systems program, Office of Advanced Research and Technology. Last year it was funded at $35 million and this year it is requested at $35,300,000. What caused this increase?

Dr. Adams. Before you start going through each of these items in the Advanced Research and Technology program, Mr. Chairman, the total R. & D. for all these programs represents about 10 percent of the NASA R. & D. budget. We have an increase in 1969 over 1968. The increase is explained on the basis of two programs. One, an aeronautics program where the increase is about $10 million, and the other one in nuclear rockets where the increase is $6 million.

Now, insofar as the other programs are concerned, we have gone through redirections and changes.

Mr. Evins. For this program the total in 1967 was $33,909,000, the total in 1968 was $35 million, and the total recommended for 1969 is $35,300,000.

PARACHUTE PROGRAM

Dr. Adams. All right. Specifically on the line item you asked about, space vehicles, we have an increase there. That is associated—that $300,000 increase—is associated with a program on parachutes for recovering vehicles from space. This effort is to bring spacecraft in, and land them on land. We would look forward in the future to having Dr. Mueller actually use these for recovery of spacecraft on land.

As a matter of fact, these are being tested by the services for parachute systems for men and supplies. We have had a total of close to a thousand drops with these parachutes without a single failure. They are being tested by the military services for men bailing out of aircraft.

JUSTIFICATION MATERIAL

Mr. EVINS. Mr. Reporter, place in the record article 1 of volume 2, and also place in the record pages RD 51, 52, 53, at this point.

(The pages follow:)

ADVANCED RESEARCH AND TECHNOLOGY PROGRAMS

Program	Fiscal year 1967	Fiscal year 1968	Fiscal year 1969
Basic research	$21,401,000	$21,465,000	$22,000,000
Space vehicle systems	33,909,000	35,000,000	35,300,000
Electronics systems	33,597,000	39,200,000	39,400,000
Human factor systems	16,265,000	20,985,000	21,700,000
Space power and electric propulsion systems	40,440,000	44,000,000	44,800,000
Nuclear rockets	53,000,000	54,000,000	60,000,000
Chemical propulsion	33,638,000	37,250,000	36,700,000
Aeronautical vehicles	35,900,000	66,800,000	76,900,000
Total	268,150,000	318,700,000	336,800,000

SUMMARY

PROGRAM OBJECTIVES AND JUSTIFICATION

The objectives of this program are to identify and solve technical problems important to the design and operation of spacecraft and launch vehicles. The program supports current missions of NASA and the military services, and seeks to provide advanced technology for the conception and design of future space vehicles. The program encompasses problems of manned and unmanned flight including launch and exit through the atmosphere, flight in space, entry into the atmospheres of earth and other planets, and landing.

Research activities are conducted in a variety of ground-based facilities in aerothermodynamics, structures, and a number of space environmental areas, such as high-energy radiation, meteoroids, and thermal control. Key flight experiments are also conducted in close association with the ground-based research. The program also provides a centralized function within NASA for the formulation and documentation of authoritative space vehicle design criteria based on operational experience and the latest research information.

SUMMARY OF RESOURCES REQUIREMENTS

[In thousands of dollars]

	1967	1968	1969
Supporting research and technology	$26,777	$30,258	$31,300
Lifting-body program	1,000	1,200	1,200
Reentry heating flight experiments	1,800	2,206	1,500
Project Pegasus	70		
Small space vehicle flight experiments	4,262	1,335	1,300
Total	33,909	35,000	35,300

BASIS OF FUND REQUIREMENTS

Supporting research and technology

Special emphasis will continue in fiscal year 1969 to develop the technology of gliding flexible-wing descent systems for land recovery of manned vehicles. This effort will include flight tests of large-size flexible wings to investigate deployment, air loads, flight control and structural design. Research will also continue on aerodynamic performance, flight control, heat protection and structural problems of advanced entry vehicles having substantial reentry maneuverability.

Research in space vehicle structures will be undertaken to develop advanced structural concepts, to exploit new structural materials, and to advance structures technology for improved efficiency and cost effectiveness of space vehicles.

Particular attention will be given to improved techniques of analysis and better ground test simulation of high-frequency dynamic conditions to reduce the necessity for overdesign and overtesting. Advanced structural analysis techniques are being developed for complex integrated space vehicles, including interactions on stages and subsystems. Research will continue on improved structural techniques for storing cryogenic fluids in space.

Efforts will continue on the effects of the space environment on vehicle design and operation. Research will continue on the effects of space radiation on spacecraft materials and components to advance the technology of shielding methods and design. Promising advances for simulating meteoroid impact will be pursued in fiscal year 1969 to improve capability in the laboratory for investigating the meteoroid penetration hazard. Also, emphasis will be placed on new detection techniques for use in obtaining better flight data on the meteoroid hazard in the near-earth and asteroid regions of space. A broad attack on problems of thermal control of spacecraft will be continued in fiscal year 1969.

In fiscal year 1968, substantial progress was achieved in preparing authoritative space vehicle design criteria documents in areas of structures, chemical propulsion and guidance and control. Effort will be continued in these areas in fiscal year 1969 and some initial activity will be undertaken in electromechanical mechanisms.

Lifting-body program

The flight program with manned research vehicles (currently two NASA types designated the M2–F2 and the HL–10) will continue to investigate the piloting and control problems of lifting-body configurations at transonic speeds and during terminal approach and landing. Flight testing was delayed in fiscal year 1968 due to a landing accident with the M2–F2 (NASA lifting body) on its sixteenth flight, and due to modifications found necessary for the HL–10 (NASA lifting body). The fiscal year 1969 funds are required to continue the HL–10 flight tests and to initiate tests of the USAF's X–24A which is a part of this cooperative program.

Reentry heating flight experiments

Two reentry experiment payloads are being fabricated for launch with Scout vehicles to obtain anchor-point data on the heating rates associated with turbulent boundary layers on clean, nonablating surfaces at high mach numbers and on the conditions related to transition from laminar to turbulent flow.

The first experiment will be flown in the first half of calendar year 1968. Fiscal year 1969 funds will provide for completion of the second payload and launching of the second experiment.

Preliminary definition of follow-on experiments with ablative heat shields to determine the effects of complex ablation processes on heat shield performance and body motions will be initiated during fiscal year 1969.

Small space vehicle flight experiments

Selected flight experiments will be conducted using small sounding rockets and other techniques to provide critical data that cannot be acquired in ground-based facilities, as well as to provide anchor-point data in flight to verify laboratory theoretical and experimental research. The principal effort in fiscal year 1967 and fiscal year 1968 involved flight tests of large parachutes high in the Earth's atmosphere to develop technology for deceleration of instrumented capsules in the low-density Mars atmosphere. Further tests will be conducted in fiscal year 1969 to extend the mach number range of investigation.

Small rocket-launched tests of advanced heat shield materials will also be continued in fiscal year 1969 in close association with ground-based research.

Basic Research

Mr. Evins. Basic research goes up from $21,465,000 to $22,000,000. Do you want to tell us about this increase in basic research?

Dr. Adams. Yes, sir. It is associated with an increase in the materials program. The materials work here has as its objective to improve the thermal characteristics and performance characteristics of materials for aircraft space systems.

Mr. Evins. Place in the record pages RD11–1 through RD11–5.

(The information follows:)

PROGRAM OBJECTIVES AND JUSTIFICATION

The Basic research program supports fundamental research in the physical and mathematical sciences. It is aimed at providing an understanding of the physical phenomena pertinent to other NASA programs concerned with current and future aircraft and space activities. This basic research is carried out principally in NASA's research and flight centers supplemented by investigations at universities, industrial research laboratories, and other Government research centers. Fundamental understanding of physical phenomena in many fields of science is required to develop the technology for NASA's programs. Basic research in NASA, therefore, must encompass a wide spectrum of disciplines. It ranges from very fundamental studies into the nature and properties of atoms and molecules to the more applied research areas of determining the best materials for the supersonic transport airplane.

The Basic research program is divided into four broad disciplines: fluid physics, electrophysics, materials, and applied mathematics.

Fluid dynamics research covers the three general areas of aeronautical fluid dynamics, entry fluid physics, and internal fluid mechanics of propulsion and power systems including the problems of clear air turbulence, sonic boom, aerodynamic heating and aerodynamic control of high speed aircraft. Reentry research focuses on improved understanding of the parameters which influence heating, the ablative response of the heat shield, and on the three dimensional flow fields about maneuverable bodies. Fluid dynamic principles were applied to study blood circulation. Existing test data were analyzed in an attempt to develop simple and more precise circulator diagnostic procedures.

The objective of the electrophysics program is to obtain new knowledge of the effects of acoustic, gravitational, electric, and magnetic forces on the electronic, nuclear, atomic, and molecular constituents of matter. New information in this area is the source not only for advances in the technology programs of electronics, space power and space propulsion, but also for the exploration and understanding of complex phenomena in space; for example, the interaction of the charged particles of the solar wind with the magnetosphere, and the determination of the motion of the earth's magnetic field.

Materials research has as its objective the understanding of the characteristics and behavior of materials. It ranges from studies into the fundamental properties of solids to investigations of how and why engineering materials fail. Increasing emphasis is being placed on the behavior of electrons in solids and the effect of the corrosive environments on metals and polymers over a wide range of temperatures. Research on mechanisms for improving the strength of composite and ceramic materials is continuing. The understanding of all such materials will enable advances to be made in the utilization of both currently available as well as newly developed materials to advanced aircraft and more sophisticated spacecraft.

The research program in applied mathematics is concerned with the improvement of mathematical techniques required for problems in aerospace science and technology. A mathematical approach is often the most feasible and economical for planning experiments. It is also a necessary basis for precise and reliable designing of the complicated and expensive pieces of hardware needed for various NASA operations. For example, mathematical research in numerical analysis, by developing faster and more effective computation procedures, has reduced the cost of digital simulation mission studies necessary for the successful design of such items as the Saturn V vehicle.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$21,401,000	$21,465,000	$22,000,000
Total	21,401,000	21,465,000	22,000,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Marshall Space Flight Center	$888,000	$824,000	$840,000
Goddard Space Flight Center	145,000	161,000	160,000
Jet Propulsion Laboratory	4,757,000	4,089,000	4,000,000
Ames Research Center	2,126,000	2,006,000	2,050,000
Electronics Research Center	1,231,000	1,805,000	1,900,000
Langley Research Center	2,360,000	2,793,000	2,900,000
Lewis Research Center	2,775,000	2,677,000	2,930,000
NASA Headquarters	6,584,000	6,884,000	7,220,000
Western Support Office	535,000	226,000	

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Fluid physics	$4,875,000	$4,910,000	$5,050,000
Electrophysics	7,290,000	7,315,000	7,320,000
Materials	7,811,000	7,800,000	8,170,000
Applied mathematics	1,425,000	1,440,000	1,460,000
Total	21,401,000	21,465,000	22,000,000

FLUID PHYSICS

The fluid dynamics program specifically applicable to aeronautics is being expanded. A program of research on the sonic boom has begun. Studies will be initiated on aerodynamic noise associated with turbulent jets, internal flows, and combustion processes. The important operational problem of clear air turbulence is also being studied.

Aerodynamic studies in the rarified gas dynamic regime, simulating satellite conditions, are providing new understanding of the orbital characteristics of satellites.

Aerodynamic heating is particularly severe at the nose of the entry vehicle during entry into the atmosphere at speeds greater than that for Apollo. The problem is one of heat shield survival. There is a need for either a significant improvement of heat shield performance or a means of significantly reducing the heating rate. Both approaches are being pursued. Three-dimensional analysis of the flow fields about maneuverable entry configurations will begin.

The problem of the detailed boundary layer behavior relating to rocket nozzle throat heat transfer is being studied. The possibility of inducing laminar flow in the throat region to reduce heat transfer rates is also being investigated.

Fluid dynamic analysis techniques were applied to experimental data on blood flow through animal organs to provide information on flow rate, blood volume, and transit time. Theoretical results agree with the measured values. Hopefully, the technique will be modified for human application to provide a safe positive test of the condition of cerebral circulation for possible use in selecting astronauts.

ELECTROPHYSICS

The electrophysics program is conducted within the research laboratories of NASA, at universities, and at industrial and other Government laboratories. Specifically, the work includes a number of new investigations such as the use of laser beams for information storage purposes. High-density (10^7 bits per square inch) information can be obtained on a thin film of manganese bismuth by using a very fine laser beam in a magnetic field to produce discrete 1-micron-size spots on the thin film. In comparison, about 10 cubic feet are needed to store the same number of bits in a modern computer. Also, a new advance in superconductivity promises to raise the critical temperature below which superconductivity occurs. At present, the highest critical temperature is 20° K. (−423° F.) which means that liquid helium must be used for cooling. This is a serious disdvantage to the possible uses of superconducting magnets in space applications, such as shielding against energetic-charged particles. The new advance covers theoretical prediction and experimental verification that in a

composite structure of two thin-film superconductors separated by an insulating film, the critical temperature can be increased.

Investigations of plasma acceleration and plasma-energy generation are being carried out which involve fundamental phenomena such as ionization, excitation, and radiation of atoms and molecules. Because results from theory and experiment do not agree very well in some cases, the research will include the collisional interactions of atoms such as cesium, argon, and xenon so that the energy transfer in these processes may be understood. Both plasma power devices and thermionic diode power converters will benefit from these studies.

Magnetoplasmadynamic arcs require substantial improvement in efficiency to be useful in space propulsion and power systems. The problems are that the electrical discharge is not uniform enough as it spreads out into the exhaust, the ionization rate does not reach optimum values, and plasma instabilities cause an undesirable dissipation of electrical power. Continued research is expected to solve these problems.

MATERIALS

The scope of the materials program includes the understanding of the behavior and properties of solid materials, metals, ceramics, polymers, composites of these materials, minerals, and lubricants. Studies of the effects of a wide range of environments on material behavior are increasingly being emphasized. Particularly the effects of cryogenic and very high temperatures, and those of corrosive and embrittling fluids are under investigation. Studies of the physics and chemistry of solids emphasize the interrelationship between the electronic, atomic, molecular, and macroscopic structures of materials and their electronic, mechanical, and chemical properties. Methods for controlling these structures are of particular interest in order to obtain desired combinations of properties. These fundamental studies are expected to provide new capabilities for predicting and controlling material properties and in developing new materials. For example; fundamental studies on the nature of the bonding in carbides are indicating what means might be taken to produce materials having high strengths above 4,000° F.

Other high temperature materials are also receiving continuing emphasis. The strengthing of nickel-base superalloys with dispersions of fine refractory particles and with fibers is providing new insight into strengthening mechanisms as well as improved alloys. Because the refractory metals, tungsten and chromium, are known for their brittleness as well as their high-temperature strength, our research metallurgists are also studying how to improve their ductility.

Premature failures in metallic structures due to corrosive or embrittling environments continue to attract our attention. By studying the mechanisms which cause cracking in metals while being subjected to loads and corrosive fluids, the means may be provided by which gas storage vessels and high-performance aircraft structures will be improved.

Another problem area in high-speed aircraft that requires particular attention is that of sealants for fuel tanks. For such applications, elastomeric materials are required having longtime stability at high temperatures and at the same time being compatible with the aircraft structural materials and the fuel. Research is being initiated to synthesize new types of elastomers having improved high temperature properties.

APPLIED MATHEMATICS

The applied mathematics program promotes the formulation of mathematical models and computer programs for more effective and economical treatment of problems in aeronautics and space technology. Research is carried on in various relevant mathematical fields such as analysis, calculus of variations, mechanics, and numerical methods.

Gravitational and orbital mathematics needs research in differential equations and celestial mechanics relevant to design and motion of spacecraft. Further research is required on solutions of partial differential equations arising in electromagnetic and radiation theory and in heat conduction problems of hypersonic vehicles.

Mathematics research will continue on aeronautical problems such as the use of the calculus of variations in optimization of aircraft trajectories and in

the mechanics of thin shells, approximation methods for solving control equations, and on the stability of systems of nonlinear differential equations.

Geophysical and planetary mathematics requires continuing research in analytical mechanics and relativity theory as well as numerical analysis and data processing methods for best exploiting the vast amounts of data received at NASA tracking stations. The latter fields of research are also being pursued in the area of tracking and data processing mathematics, along with the widely applicable topics of error analysis matrix inversion and statistical estimation theory.

Response to Mr. Evins' question regarding space vehicle systems R. & D. program funding increase from $35 million in fiscal year 1968 to $35.3 million in fiscal year 1969:

The change in level of funding requested for the space vehicle systems program resulted from changes in emphasis in certain elements of the program. Turning now to the table on page RD 51 of volume I (summary data), it can be seen that the space vehicle systems R. & D. program funding is increased from $35 million in fiscal year 1968 to $35.3 million in fiscal year 1969. The principal factor leading to this request for an increase of $300,000 is the requirement for technology to permit land recovery of manned spacecraft such as Apollo.

During fiscal year 1968 we have been working diligently at the Langley Research Center and the Manned Spacecraft Center to obtain technical data required to permit us to proceed with confidence with the construction of very large flexible wings capable of land recovery of a 15,000-pound multimanned spacecraft. Our objective in undertaking this research and advanced technology program at this time is to obtain at the lowest possible cost the data and experience required before proceeding with a much more costly development program.

Principal attention is being given to a gliding parachute-like device which we call parawing. The Army and Navy have made more than a thousand successful manned jumps and landings with parawings, and NASA has undertaken more than 500 unmanned research flights. All of these tests have, of course, been conducted with lightweight payloads and very small parawings. There are, therefore, many problems which must be investigated thoroughly at large scale to develop confidence and the technology required.

The scaling of test results of small flexible wings to sizes large enough to recover Apollo is a major problem.

The highest loads on parachutes and flexible wings usually occur during deployment. It is necessary, therefore, to devise new techniques for packaging and deployment, as well as the accurate prediction of loads experienced under all flight conditions.

Conventional parachutes use high-porosity materials which are not suitable for gliding and maneuvering parawings. We have much to learn about canopy materials; for example, effects of porosity, vacuum storage, heat, and hysteresis after severe loadings. Structural design is largely dependent upon the properties of materials and since our experience to date is principally with parawings of only 20 feet in span, data are required for the design of the strongest structural arrangement for the least weight for parawings as large as 200 feet in span.

One of the most attractive features about flexible wings is their ability to be controlled and maneuvered in gliding flight. Knowledge of performance and control of large-scale parawing vehicle systems is required to insure reliability when maneuvering and landing.

The parawing program is a progressive, step-by-step research effort which started with 400 square feet wings and will lead finally to experiments with large 12,000 square feet wings. It is in this was that we shall develop the required technology in an orderly and economical manner.

In summary, the additional $300,000 in fiscal year 1969 in the space vehicle systems R. & D. program is required to partially fund a research program on the use of large flexible wings for land recovery of manned spacecraft. The other funds required will be obtained by a stretchout of other R. & D. elements of the space vehicle systems program.

Electronics Systems

Mr. Evins. The third item is electronics systems, up from $39,200,000 to $39,400,000. Without going into the breakdown, tell us why this increase.

Dr. ADAMS. This increase is associated with emphasis in the area of electronics supplied to aircraft. In particular, we are making use of space-developed technology and are applying that to V/STOL aircraft, to make then easier to fly and overcome this very difficult problem of landing from the forward speed.

Mr. EVINS. There is nothing in this item that will be for the operation of the electronics center in Cambridge, this is for research beyond administrative expenses?

Dr. ADAMS. That is correct. Some of this will be administered and managed by the Center, but it is a research and development item.

Mr. EVINS. Will a large portion of this be in-house or will it be contracted out?

Dr. ADAMS. The larger portion of this is contracted out of house. Most of the funds go to contractors and some of it goes to supporting in-house work, but a greater amount, greater than 70 percent of this, goes to contractors.

Mr. EVINS. Place in the record at this point pages RD 13–1 through RD 13–7.

(The information follows:)

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the Electronics Systems program is to provide the knowledge and technology which will satisfy the requirements of future space and aeronautical systems in the most effective and efficient manner. Research activities include all elements of electronics and control functons from conceptual studies through the development and evaluation of new or improved components and subsystems. The program efforts center on: (1) support of future space missions, (2) improved avionics systems for all types of aircraft, and (3) general research on new or advanced techniques in the functional areas of instrumentation, data processing, communications, guidance, control, and component technology. Achievement of program goals is sought through analytical and experimental studies performed in industrial, academic, and government laboratories. Flight experiments are employed to collect data, confirm research results, and verify predicted performance in those areas which cannot be adequately studied in the laboratory.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$32,302,000	$38,700,000	$38,900,000
Flight projects	1,295,000	500,000	500,000
Total	33,597,000	39,200,000	39,400,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1957	1968	1969
Manned Spacecraft Center	$292,000	$150,000	$150,000
Marshall Space Flight Center	4,049,000	2,655,000	2,600,000
Goddard Space Flight Center	3,306,000	2,660,000	2,700,000
Jet Propulsion Laboratory	2,282,000	3,305,000	3,300,000
Ames Research Center	3,735,000	3,815,000	3,815,000
Electronics Research Center	9,716,000	15,935,000	16,100,000
Flight Research Center	845,000	890,000	890,000
Langley Research Center	7,156,000	5,320,000	5,500,000
Lewis Research Center	450,000	400,000	400,000
NASA Headquarters	1,761,000	4,070,000	3,945,000
Western Support Office	5,000	----------	----------

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Advanced concepts	$1,071,000	$3,820,000	$3,735,000
Guidance systems	7,368,000	8,200,000	7,890,000
Control systems	6,444,000	5,900,000	6,275,000
Communications	4,615,000	4,775,000	4,730,000
Tracking and data acquisition	3,060,000	3,625,000	3,640,000
Data handling and processing	3,140,000	4,010,000	4,025,000
Instrumentation	3,609,000	3,810,000	4,055,000
Electronic techniques and components	2,995,000	4,560,000	4,550,000
Total	32,302,000	38,700,000	38,900,000

ADVANCED CONCEPTS

Research in the advanced concepts subprogram is comprised of studies to define technical requirements of future aerospace systems, the development of methods and techniques for performing system analyses, and large system efforts which encompass several functional areas.

Efficient operation of supersonic aircraft requires the use of the most advanced technology available. To meet this requirement in those functions performed electronically, the Electronics Research Center has begun development of an integrated electronics system for supersonic aircraft. Current efforts are centered on the analysis of system requirements. In fiscal year 1969, these efforts will continue and development of system components will begin.

Earth orbiting spacecraft provide outstanding opportunities to study and evaluate the earth's natural and manmade characteristics through the use of onboard sensors. Principal constraints on this technology are the resolution of available sensors and methods for efficient analysis and reduction of accumulated data. Studies of typical data obtained in past space missions have begun and will continue in fiscal year 1969 to identify useful features of that data, and determine areas where improved sensors or data handling techniques can improve the quality and efficiency with which useful results can be obtained.

GUIDANCE SYSTEMS

Guidance system research has the objective of providing improved sensors and techniques for determining the position and flight path of aerospace vehicles. Principal efforts include the development of advanced inertial and electromagnetic sensors, high reliability computers, and simplified equations for guidance and navigation.

Prior year efforts on strapdown (fixed-nongimbaled) inertial guidance systems using electrostatic gyros will culminate in laboratory tests of the complete system during fiscal year 1969. Flight tests on test aircraft will follow. Research on long-life, highly accurate gyros and accelerometers for gimbaled systems will continue. Laboratory tests of developmental models will begin in fiscal year 1969.

Research in electromagnetic sensors will center on continued development of solid-state detectors to provide increased reliability and accuracy in horizon-sensing and star-tracking applications. Study of holographic imaging techniques as a means for determining attitude in space will be initiated. A laser radar for space rendezvous has been successfully developed and tested in ground simulations. Follow-on efforts in fiscal year 1969 will focus on development of a space experiment to confirm ground test results.

Computers are essential to the guidance and navigation of manned aerospace vehicles. A concept which provides for self-testing and repair by the computer has been developed and is now being implemented. Laboratory tests will be conducted in fiscal year 1969. Studies of techniques for integrating computer functions with the guidance sensors will continue.

Trajectory analysis provides mathematical tools for developing guidance equations and simplified techniques for accomplishing guidance and navigation functions. This work is fundamental to the guidance research and will continue.

CONTROL SYSTEMS

Control and stabilization research and development leads to improvements in space and aeronautical control systems. Areas of emphasis are precise pointing controls for astronomical telescopes, long-life spacecraft attitude controls, flight controls for vertical/short takeoff and landing (V/STOL) aircraft and general aviation use, and display and other component devices.

Efforts on control moment gyros (CMG) control techniques for precision pointing applications have been previously reported. This work is being extended to study control systems for large, flexible manned spacecraft. Simulation and test equipment for this purpose have been procured. Component tests are completed. Full-scale CMG system tests will be initiated in fiscal year 1969.

A versatile facility for long-life attitude control system development has been installed at Ames Research Center. Sensor logic and actuator design will be studied in this facility during fiscal year 1969 to obtain optimized control systems for unmanned observatory and earth resources satellites.

Flight controls for V/STOL aircraft are being studied to develop systems which can provide stable, possibly automatic, vertical takeoffs and landing. A display generator, developed in prior year efforts, is being used to study short takeoff and landing displays for low-noise approaches. This will lead to display development in fiscal year 1969. Improved flight controls for general aviation aircraft are being developed. Research on proximity warning indicators (PWI) seeks to reduce the danger of midair collisions in civil aircraft. Flight tests will occur in fiscal year 1969. Display devices which operate in bright light are being developed and will be improved in the coming year.

Components such as a new variable-field brushless direct current motor, are being developed for general use in control systems. Contributing to all control system development is a program of basic and applied control theory research.

COMMUNICATIONS, TRACKING AND DATA ACQUISITION

Earth resources satellites and orbiting astronomical telescopes must transmit high resolution images back to earth in quantities which will exceed the capability of our present technology. Future deep space missions also require greatly increased data rates to make the greatest use of their capabilities as they pass other planets and endeavor to map their surfaces. Each mission has specific requirements which influence the techniques and frequency to be used so studies are continually performed to determine the optimum systems. Research is continuing in the improvement of components such as high-power, high-efficiency tubes and large space-erectable antennas. Since large reductions in size and weight can be attained by the use of higher frequencies, both submillimeter and optical techniques are being explored. The technology of optical communications has progressed sufficiently during the past 3 years to give savings in size and weight of 50 percent or more over conventional microwave systems and, at the same time, to increase the communication margin of safety by a factor of 30. In fiscal year 1969, work will continue on the development of laser light sources, modulators, detectors and telescopes. In all of these communication systems, improved performance can be obtained at minimum cost by the use of advanced coding techniques. A recent development in this area will be used in the Pioneer D mission. Other promising techniques will be explored and developed with university grants in fiscal year 1969.

To improve the quality or resolution of astronomical telescopes, it is extremely desirable to place the telescope outside the earth's atmosphere. A telescope in space could see celestial objects with 200 times the detail available to earth telescopes. However, to build and operate a large space telescope, new mirror materials must be found and tested, and a method must be developed for determining the accuracy of mirror surfaces and for continually correcting the detected errors. Research on these problems is underway and will continue in fiscal year 1969.

The availability of lasers furnishes a valuable tool for attaining increased accuracy in tracking satellites. Pulsed ruby laser systems have already achieved an accuracy of 1.5 meters. The use of argon lasers and doppler techniques should yield an improvement to approximately 15 centimeters. Development of a tracking system employing these techniques will continue in fiscal year 1969.

DATA PROCESSING

To keep pace with the increasing needs of aerospace missions, continuing advances in both ground-based data processing and spacecraft computing capability are needed.

Prior year funds have provided computer programs and equipment which permit more effective communications between experimenters and large ground-based computers in the solution of complex problems. Techniques are being developed to facilitate the extraction of useful information from data obtained in space experiments. In fiscal year 1969, continued improvements in these techniques will be sought, with particular emphasis on methods for expediting the analysis of data from spacecraft, wind tunnel tests, pilot/control and physiological experiments.

Research efforts in previous years have resulted in the development of basic components and conceptual circuit arrangmeents which have exhibited major performance improvements in laboratory demonstrations of spaceborne computers. Fiscal year 1969 work will be directed toward system refinement and development of engineering models for additional testing. Further development is expected to result in spacecraft computers equal in performance to current large scale ground-based computers.

Research will also continue on techniques for preprocessing data on board spacecraft to minimize the quantity of data transmitted and processed on the ground.

INSTRUMENTATION

Aerospace missions of the future will continue to be heavily dependent on the availability of measurement techniques to obtain scientific data, and instruments for obtaining test and engineering measurements.

Development of techniques which provide visual and optical information is particularly important. Prior year research efforts have advanced our capability to measure and provide information related to launch vehicle and spacecraft design and testing, space operations and ground simulation facilities. Application of microelectronic technology, developed under other programs, has been of considerable benefit to instrumentation research. Fiscal year 1969 efforts are planned to continue the application of such related technologies and develop additional capability to measure and sense physical phenomena in parts of the electromagnetic spectrum which are still relatively unexplored (particularly in the infrared and ultraviolet regions).

Lasers are receiving more and more attention in the field of instrument research because of their unique properties. One particularly interesting development is a ground based laser system which measures density of the earth's atmosphere in a vertical direction. In addition to the unique capability of making measurements from the ground which were previously only available from balloons or rockets, this development has provided a possible technique for detection of clear air turbulence (CAT), a problem of serious importance in jet aircraft operations. Fiscal year 1969 funds are planned to continue the original development program and to investigate feasibility of airborne CAT detector systems using lasers. Other research efforts will continue to study the application of lasers to instrumentation problems.

ELECTRONIC TECHNIQUES AND COMPONENTS

Research in electronic techniques and components seeks to develop improved electronic devices with increased versatility, higher initial quality and longer useful lifetimes, and to establish principles and practices for testing and using these devices more effectively.

Recent advances in electronic component technology have led from discrete parts to integrated circuits and currently to large-scale integration (LSI) in the equivalent of hundreds of parts formed and interconnected automatically on a single device. The potential utility of this technology to provide complex electronic functions with minimum space and weight requirements makes continued research and development essential. During fiscal year 1969, research efforts will seek better materials for making large-scale integrated circuit devices and improved fabrication techniques. The tiny size of the parts arranged on each device requires development of new tools and techniques for inspecting and testing finished products. Since many parts are located on a single device, efficient circuit design requires the development of computer techniques which can quickly examine all possible combinations of circuit elements and enable the designer to select the best arrangement for a particular application.

Research will continue on methods for making interconnections and cables which join the electronic components into systems, and on improved packaging and assembly techniques. Efforts to develop parts that will withstand the variations of the space environment, particularly temperature extremes, will receive increased emphasis in fiscal year 1969.

FLIGHT PROJECTS

	1967	1968	1969
Radio attenuation measurements (RAM-C)	$1,000,000	$500,000	$500,000
Small flight project (scanner)	295,000		
Total flight projects	1,295,000	500,000	500,000
Scout (launch vehicle procurement program)	(700,000)	(900,000)	(...)
Total (including launch vehicles)	(1,995,000)	(1,400,000)	(500,000)

Flight projects provide verification of laboratory investigations and acquire data on natural phenomena which are essential to the development of advanced sensors and systems. Brief descriptions of these projects are provided in the following paragraphs.

RADIO ATTENUATION MEASUREMENTS (RAM)

Project RAM is concerned with alleviating the communication blackout caused by the plasma which surrounds a spacecraft as it reeenters the atmosphere. RAM C–1 was successfully flown in October 1967 and demonstrated the partial effectiveness of the use of higher frequencies and of the injection of water into the plasma in overcoming the blackout problem in the 25,000 foot per second velocity range. RAM C–B will be flown in calendar year 1968 to determine with greater accuracy the characteristics of the reentry plasma sheath in the 28,000-foot-per-second velocity range.

Several materials have shown an ability in laboratory tests for further alleviating the blackout problem. If further investigation indicates their superiority over water, a flight test using an existing backup spacecraft will be considered for fiscal year 1969.

Human Factor Systems

Mr. Evins. Human factor systems, it was $20,985,000 and the year before it was $16,265,000 and it is up to $21,700,000. Why these increases?

Dr. Adams. This area is a vital one, Mr. Chairman. We are engaged here in improving the life support systems, the two-gas systems for future manned spacecraft, also highly reliable long duration life support components that will be needed. In addition, we are engaged in the application of life support technology to aircraft. We mentioned an example the other day, the generation of oxygen from water.

Mr. Evins. Will this research be in-house or by contract?

Dr. Adams. Again, the majority of this is contracted out to industry. About 70 percent of our research and development funds go to contracts with industry and about 30 percent is to provide equipment to support in-house activities.

TWO-GAS SYSTEM IN APOLLO

Mr. Evins. What do you estimate the cost of putting two-gas systems into the Apollo?

Dr. Adams. I am not in a position to make that estimate.

Mr. Evins. This is related to human factors.

Dr. Adams. Well, we do not know the cost yet. We are at the point of studying advanced components and the design know-how needed for development. Then we will know development costs more accurately.

Mr. Evins. Mr. Reporter, place pages RD 14–1 through 14–6 in the record.

(The information follows:)

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the human factor systems program is to provide the research and technology to (1) qualify, (2) support, and (3) utilize man in advanced aeronautical and space missions. This is accomplished by: (1) determining man's reactions to the unique environments of space and aeronautical flight; (2) defining the essential requirements for sustaining and protecting man in these environments; (3) developing the technology necessary to provide suitable life support and protective systems; and (4) integrating man's capabilities with those of machines to obtain composite systems of superior performance. In this manner we can insure the optimum utilization of man in space as an observer, as a mechanic and as a decision maker.

This is accomplished through timely ground based research in human factors validated by critical flight experiments in air and space. This will provide the confidence necessary for the use of man in the future spectrum of missions. The technological tasks to be accomplished include assessment of the physiological and psychological effects on man, human engineering, extravehicular engineering, personal protection and life support. Understanding of the physiological effects on man as he responds to future aeronautical and space stresses is necessary for his effective integration with the total system. Human engineering is essential for the development of design data and procedures for aviation, maintainability in space, and for the appropriate integration of man in the man-machine complex. Extravehicular engineering will provide the astronaut with work aids, translation devices, and other augmentation systems for use in free space as well as in extraterrestrial surface environments. Life support is one of the most difficult technology areas because of the many sub-system capabilities that must be integrated as a functional system. Space suits and astronaut protection devices are life saving devices which must be fail safe, but must provide a functional capacity for work with a minimum of decrement.

The Human Factor Systems Program is accomplished through a multidisciplined approach including researchers in nearly every field of medicine, biology, psychology, engineering, physics, and electronics, located in NASA installations, Department of Defense aerospace medical facilities, universities, and industry.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$14,765,000	$19,385,000	$20,200,000
Small biotechnology flight projects	1,500,000	1,600,000	1,500,000
Total	16,265,000	20,985,000	21,700,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Manned Spacecraft Center	$1,160,000	$2,300,000	$2,600,000
Marshall Space Flight Center	100,000	300,000	300,000
Jet Propulsion Laboratory		50,000	
Wallops Station		535,000	500,000
Ames Research Center	5,498,000	6,225,000	6,250,000
Electronics Research Center	610,000	980,000	1,250,000
Flight Research Center	1,300,000	1,000,000	1,100,000
Langley Research Center	4,516,000	5,955,000	6,850,000
Lewis Research Center	66,000	150,000	150,000
NASA headquarters	2,979,000	3,390,000	2,700,000
Western Support Office	36,000	100,000	

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Human research and performance	$6,595,000	$5,985,000	$6,250,000
Life support and protective systems	5,262,000	9,000,000	9,250,000
Man-systems integration	2,492,000	3,900,000	4,200,000
Advanced concepts	416,000	500,000	500,000
Total	14,765,000	19,385,000	20,200,000

The President's Scientific Advisory Committee report on this program emphasized the necessity to qualify man for possible future space exploits. The expertise of the Space Science Board's summer study groups and committees provides the plan of attack on these problems. In fiscal year 1969, a systems analysis approach will be used to determine how the adaptive mechanisms of the cardiovascular system perform their function of limiting the deleterious effects of stresses. Computerized mathematical models will be used to study these mechanisms based on data obtained from instrumented animals. A key element in these studies is the provision of bioinstrumentation to measure the dynamic response of living systems to various stresses. Instrumentation techniques include the use of ultrasonics to measure blood flow and microminiature implanted sensors to measure pressures, volumes, and accelerations. Ames Research Center has developed implantable multichannel telemetry sensors, which have been active for 5 months in animals.

The toxicity of oxygen at various pressures is being determined in several species of animals preliminary to human tests in fiscal year 1969. Experiments have shown that excessive oxygen pressure must be avoided since it can cause damage to lungs, kidneys, and other organs.

Hormones and their control of stress reactions are being studied in animals at the cellular level, as well as in humans under stress. Of 14 men tramping 10 miles in 10 days in the arctic cold at Fairbanks, Alaska, two collapsed on the seventh day. There had been no warning signs, except for a low level of one hormone, aldosterone. Further tests are necessary to establish whether a low level of this hormone is a warning of trouble to come. In the course of these space oriented studies, there sometimes are very worthwhile discoveries with other medical applications. For example, studies at Ames on hormones from the pituitary gland have resulted in the discovery of an enzyme which possibly may be used to produce human growth hormones from bovine growth hormones. Many people suffer from lack of this hormone and there is presently no adequate source of supply.

In fiscal year 1969, extensive studies of the effects of solar flares on mammalian tissue will be possible as a result of the development of a solar flare simulator for NASA by the AEC's Donner Laboratory, University of California, Berkeley. Monkeys are being exposed to determine the effects of solar flares similar to those astronauts may experience, in long missions. In a collaborative study with the Navy at Pensacola, Berkeley is studying radiation effects on the physiological balance mechanisms using monkeys, and at the NASA Langley Research Center cyclotron, a USAF team of radiobiologists is studying the effects of protracted low dose exposures. Another area of increasing research effort in fiscal year 1969 will be the bacteriological aspects of long-term space flight. Environmental factors in such flights could possibly cause nonpathogenic organisms to become pathogenic, alter the mechanisms of infection and the immunological mechanisms, and result in cross-infection of space crew members.

In aviation, major effort will continue on studies of the psychoacoustic effects of aircraft noise and sonic boom. The second year of a study on defining the annoyance parameters of this pollutant is underway. The physical characteristics of aircraft noise are being measured while families residing near eight major airports in the United States are questioned regarding their reactions to this noise. The results will be analyzed to determine if the noise would be less objectionable if, for example, certain frequencies were suppressed.

LIFE SUPPORT AND PROTECTIVE SYSTEMS

The most critical technology problem area is life support. The logistics saving by recycling water and oxygen is most desirable, but limited ground studies have indicated that available techniques for achieving this do not live up to expectations when they are embodied in a total life support system where each unit depends on the output of another. A manned environmental chamber test is planned in fiscal year 1968 to close the water loop for an unprecedented 60-day period. Four men will consume water regenerated from their liquid wastes. Of particular interest will be inventory and control of bacteria during such a run. Based on what is learned from this and other research, new subsystems must be developed with emphasis on maintainability and reliability. Such equipment will be developed in fiscal year 1969 for future manned tests on an advanced life support system. The National Academy of Sciences has furnished NASA with interim water standards for recycled water and final standards are to be determined for both water and air. The sensing and control elements of life support

systems are most important and are receiving increased emphasis, as is the difficult problem of handling human waste. Advancements in this technology are applicable to problems of air and water pollution on earth, and close liaison is being maintained with the Federal Water Pollution Control Administration and the Office of Saline Water.

The developments in new protective space suit concepts are most exciting, particularly new hard suit concepts in which man can operate with very little performance decrement because of easier mobility of the joints when the suit is pressurized. These are so promising that increased effort will include studies of applications of these concepts to soft cloth suits to improve donning, and increase mobility and performance so that their operating pressure can be increased to that of the spacecraft. Personal life support back packs will include advanced cooling and controlling systems with some using long shelf life solid chemical oxygen rather than gaseous oxygen. In aviation a new aircraft seat design is being developed which will absorb energy and provide the occupant more crash injury protection.

MAN-SYSTEMS INTEGRATION

To insure man's effectiveness in advanced aircraft and space systems, extensive studies are underway on the utilization of man in complex systems—as an operator and as a manager. In flight management, man has an increasingly complex role in assessment of the flight situation, the judgment of the significance of unscheduled events, and exercise of command-control functions. Emphasis will increase on methods of improving habitability of working and living areas of manned spacecraft for long-duration flight times. The Space Science Board has an active committee to assist in the requirements for research on this problem.

The development of extravehicular technology is a pacing item for man's work in space on astronomical telescopes, structures assembly, and crew and cargo transfer. Recommendations of the Astronomy Missions Board will influence study efforts in fiscal year 1969 on manned engineering operations in orbit including maintenance, repair, and equipment refurbishment and the development of worksite technology, tools, and work support systems. Conventional earth-type tools have been relatively ineffective. Our simulation techniques have proven so effective that the development of tools and work techniques in the weightlessness of orbital flight is now possible. Large structures such as S-band antennas are assembled in a simulated weightless environment. In aviation, the aircrew workload is being studied in order to reduce stress and fatigue and increase safety.

ADVANCED CONCEPTS

Research on advanced concepts is essential to solving the next generation of problems in any particular field. Noteworthy is a noninvasive technique for measuring velocity of blood in man by ultrasonics. It promises to have many clinical applications, as well as being a useful monitoring device in space.

BIOTECHNOLOGY FLIGHT PROJECTS

	1967	1968	1969
Biotechnology flight projects	$1,500,000	$1,600,000	$1,500,000
Scout (launch vehicle procurement program)	----------	----------	(1,500,000)
Total	(1,500,000)	(1,600,000)	(3,000,000)

In fiscal year 1969, a Scout launch of a vestibular experiment is planned to permit study of the action in weightlessness of the basic cells in the frog's balance mechanism that is similar to man's inner ear (otolith). These tiny cells detect the presence of gravity and send coded messages to the brain centers of control. It is important to measure these effects in gaining an understanding of this tiny, but very effective sensor so necessary to man's well-being in space as well as on earth. Other physiological experiments are being defined by the Ames Research Center, as an outgrowth of their human and animal research. Similarly, the Langley and Electronics Research Centers, and Manned Spacecraft Center are developing life support and protection equipment experiments.

This is accomplished through timely ground-based research in human factors validated by critical flight experiments in air and space. This will provide the

confidence necessary for the use of man in the future spectrum of missions. The technological tasks to be accomplished include assessment of the physiological and psychological effects on man, human engineering, extravehicular engineering, personal protection and life support. Understanding of the physiological effects on man as he responds to future aeronautical and space stresses is necessary for his effective integration with the total system. Human engineering is essential for the development of design data and procedures for aviation, maintainability in space, and for the appropriate integration of man in the man-machine complex. Extravehicular engineering will provide the astronaut with work aids, translation devices, and other augmentation systems for use in free space as well as in extraterrestrial surface environments. Life support is one of the most difficult technology areas because of the many sub-system capabilities that must be integrated as a functional system. Space suits and astronaut protection devices are life saving devices which must be fail safe, but must provide a functional capacity for work with a minimum of decrement.

The human factor systems program is accomplished through a multidisciplined approach including researchers in nearly every field of medicine, biology, psychology, engineering, physics, and electronics, located in NASA installations, Department of Defense aerospace medical facilities, universities, and industry.

Space Power and Electric Propulsion Systems

Mr. Evins. The next item on your summary is space power and electric propulsion systems. It goes up from $40,440,000 in 1967 to $44,800,000 in fiscal year 1969.

Dr. Adams. This program is involved in space power systems which include chemical, nuclear, and solar energy sources. As you project any future space needs, the power requirements are always increasing in order to get more data and carry out more operations in space. The increase in the budget request is associated with increased emphasis on an isotope-powered system. We are working jointly with the Atomic Energy Commission. They are developing the isotope and we are working on the power conversion system.

Mr. Evins. We will insert pages RD 15–1 through 15–12 in the record.

(The information follows:)

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the space power and electric propulsion systems program is to determine the technologies required to adequately support potential future missions; and by application of effective research and exploratory development to improve or establish these technologies to the degree required to ensure eventual successful development and application by future mission program offices.

Current estimates of potential future mission power system requirements encompass a wide range of power, life and mission environments. No one power system can meet these varied requirements. The space power program is aimed at providing the research and technology necessary for the improvement and/or development of a limited number of solar, chemical and nuclear systems for anticipated auxiliary power and electric propulsion mission requirements ranging from watts to kilowatts in the 1970's to megawatts in the 1980's.

The early application of solar-powered electric thrusters for spacecraft position control and for small, automated, interplanetary spacecraft continues to be a major goal of the electric propulsion program. The experience to date from the ATS (applications technology satellite) flight program coupled with the design and ground evaluation of typical thruster systems confirms their potential advantages of spacecraft operational flexibility and simplicity, increased payload or decreased trip time or reduced spacecraft weight. The proposed SERT (space electric rocket test) flight, the continuing ATS program and the ground technology program are essential steps toward the goal of early application.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$34,940,000	$35,400,000	$35,800,000
Space electric rocket test (SERT)		1,100,000	1,500,000
SNAP-8 development	5,500,000	7,500,000	7,500,000
Total	40,440,000	44,000,000	44,800,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Manned Spacecraft Center	$267,000	$200,000	$600,000
Marshall Space Flight Center	1,748,000	960,000	1,200,000
Goddard Space Flight Center	5,078,000	3,430,000	3,933,000
Jet Propulsion Laboratory	6,579,000	9,159,000	9,950,000
Ames Research Center	145,000	270,000	265,000
Electronics Research Center	853,000	1,550,000	1,549,000
Langley Research Center	970,000	745,000	850,000
Lewis Research Center	21,559,000	24,855,000	24,186,000
NASA Headquarters	1,808,000	2,270,000	2,267,000
Western Support Office	1,433,000	561,000	

BASIS OF FUND REQUIREMENTS
SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Nuclear flight safety	$110,000	$150,000	$165,000
Electric propulsion	8,990,000	7,800,000	7,496,000
Nuclear power generation	13,160,000	14,650,000	15,080,000
Solar power generation	7,584,000	7,700,000	7,849,000
Chemical power generation	5,096,000	5,100,000	5,210,000
Total	34,940,000	35,400,000	35,800,000

NUCLEAR FLIGHT SAFETY

Although AEC development and safety offices and NASA mission program offices have basic responsibility for safe design and development, it is necessary to do a limited amount of testing and evaluation in certain fields such as atmospheric reentry in which NASA centers have special competence. These funds are used to pay for necessary hardware and equipment at the centers to accomplish this supporting effort. This work is conducted, usually on a cooperative basis, with AEC, DOD, and other participating organizations.

ELECTRIC PROPULSION

The prime objective of this program is the advancement of electric thruster system technology for mission use. These thruster systems offer potential significant advantages for both prime and auxiliary propulsion missions. For example, reduced launch vehicle requirements for a required mission payload can be achieved for interplanetary spacecraft. In addition, flight time for certain difficult missions can be reduced, and missions totally impractical by chemical rockets can be accomplished by electric propulsion. Satellite station keeping, maneuvering, and attitude control can also be performed with reduced system weight relative to conventional chemical techniques. Propellant economy resulting from high specific impulse is the basis for these indicated performance advantages of electric thrusters. However, the propellant weight saving must more than compensate for the weight of the necessary electric power source. Since power supply weight is dependent on thruster system efficiency, a major program goal is to increase this efficiency. In addition, the thruster system must operate reliably for thousands of hours in order to realize these advantages.

Electrostatic thruster systems will continue to receive the major emphasis in fiscal year 1969. Such thrusters are characterized by the acceleration of ions or charged particles by applied electrostatic force fields. The ion engine uses two processes for ion formation; electron bombardment and contact ionization. These two types of electrostatic thruster have received the most attention in fiscal year 1968.

Endurance testing in fiscal year 1967 of 1-kilowatt electron bombardment ion thrusters has demonstrated that operating lifetimes (about 1 year) adequate for early solar array powered prime propulsion missions are achievable. During fiscal year 1968 emphasis has been placed on further improvements in thruster and overall thruster system efficiency. The 500-hour test of a single thruster system conducted in fiscal year 1967 was a precursor for a more complex system test to simulate, in a reasonably realistic manner, operation for a typical solar electric mission. Work to date on this upcoming test has progressed to the point in fiscal year 1968 where four 2.5-kilowatt electron bombardment thrusters have been clustered and preliminary thruster performance tests have been conducted. Based on these tests the subsystems which condition the power supplied by a solar array simulator and control thruster operation have been specified. Since thruster control includes the programed switching off of individual thrusters, a translation mechanism is necessary to position the thruster array so that the resultant thrust vector will not alter the attitude of the simulated spacecraft. The design of such a translation mechanism is currently under study. The complete system test is scheduled to start in fiscal year 1969, and it is intended to demonstrate the technology of a basic propulsion system design and to evaluate its capability to perform the required operational functions of solar-powered missions.

Research into possible interactions resulting from ion thruster operation, such as thruster exhaust effects on the spacecraft and on the ambient space environment, are planned to continue into fiscal year 1969. SERT II, the orbital test of a 1-kilowatt electron bombardment thruster to be launched in calendar year 1969, will augument these studies by furnishing information on possible radio frequency interference due to thruster operation and propellant exhaust deposition on spacecraft structures.

The contact ion engine appears more suitable for auxiliary propulsion applications such as satellite station keeping. Development of a 10^{-5}-pound thrust system, capable of vectoring the thrust electrically instead of mechanically, is being completed in fiscal year 1968 and will be experimentally flight tested on the applications technology satellite (ATS) D. & E., the first of which is to be launched in calendar year 1968. Effort on a higher thrust system (10^{-3} pounds) suitable for north-south station keeping of a large communication type satellite will be continued in fiscal year 1969. In addition, work on collodial particle electrostatic thrusters for auxiliary propulsion will begin in fiscal year 1969. This type of thruster may greatly reduce power requirements.

Resistojet thrusters which produce thrust by the expansion of an electrically heated gas through a nozzle have been experimentally flight tested. The ATS–I flight experiment reported on last year did not result in a satisfactory test because of undetected damage sustained during installation. Preliminary telemetry data obtained from a second flight experiment on ATS–III indicate that thrust has been successfully produced. Additional data are presently being studied to completely evaluate the operation of the flight experiment. This type of resistojet is planned for operational use on both the ATS-D. & E. synchronous attitude spacecraft for east-west station keeping.

System studies have shown that resistojets operating at higher temperatures are of interest for drag cancellation of large orbiting space stations. It is planned to continue life testing of these high temperature resistojets in fiscal year 1969. Also, research efforts in fiscal year 1969 will be directed toward the utilization of biowaste products as propellant for these thruster types.

The third category of electric thruster is the electromagnetic device which differs from other types in that the interaction between high currents and magnetic fields is used in the production of thrust. These thruster types offer potential size advantages relative to ion engines. The major problems limiting development are in acquiring a basic understanding and verifying the performance of laboratory devices. Progress in fiscal year 1968 was marked by the discovery of a rapidly rotating current sheet in steady state MPD (magneto-plasma dynamic) arcs and the completion of a fiberglas testing chamber which will

eliminate electrical interaction with vacuum tank walls, one source of uncertainty in performance determination. Research presently in progress will continue in fiscal year 1969.

NUCLEAR POWER GENERATION

The objective of the nuclear electric power technology program is to provide a broad option and design basis for the selection and evaluation of energy conversion equipment to be used in advanced nuclear electric power systems for future space missions. These systems will utilize nuclear energy generated by isotope or reactor heat sources, and therefore, an understanding of and close cooperation and coordination with AEC isotope and reactor programs are maintained. The program covers the power range from watts to megawatts with system endurance goals of 1 to 5 years. Primary efforts include the Brayton gas cycle turboelectric system, the Rankine cycle alkali-metal turboelectric system, and the thermionic direct conversion system. Other concepts such as thermoelectric and magnetohydrodynamic conversion cycles are also being examined. The technology underlying these systems is a long-range effort requiring the establishment of engineering data relating to new materials, working fluids and components at temperatures never before used in power systems.

The Rankine cycle and thermionic conversion systems in combination with reactor heat sources under devleopment by AEC offer the potential of achieving the lightest power system weights at high power levels for both auxiliary electric power and electric propulsion systems. The Brayton system, with its inherent high cycle efficiency and inert gas working fluid, offers an attractive power source in the 2–10 kilowatt range for manned applications, especially if coupled with isotope heat sources, provided the high inherent efficiencies can be demonstrated in such small units operating on gas bearings.

The Rankine turbogenerator program in fiscal year 1968 made significant progress in design, fabrication and tests of major components, and in characterization of the system as a whole. Among the significant advances were the following: comprehensive analyses and preliminary designs were completed for the full scale turbine, generator and turbogenerator package, thereby providing a basis for the design of the turbogenerator which is the critical component of the power conversion system. A detailed design was completed on a high temperature (2200° F.) electromagnetic lithium pump. During fiscal year 1969 the design of the turbogenerator will be developed in greater detail. The lithium pump and a high temperature test facility will be built for tests of the lithium pump's performance and endurance.

Fabrication was completed and tests were started on an advanced potassium turbine, electromagnetic boiler feed pump and lithium heated boiler. Experimental investigations were also initiated on corrosion resistance of advanced high temperature tantalum alloys, high temperature alkali metal valves and high temperature electrical switchgear capable of operating in alkali metal systems at temperatures in excess of 1000° F.

These first are important milestones of engineering ingenuity. As part of these successful component fabrication programs, major advances were made in the forging, broaching and brazing of advanced molybdenum-based and tantalum-based alloys, and in the application of nonrefractory super-alloys. Such technology advances are essential if we are to be able to use the liquid metal resistant and strong, but brittle, and oxidation susceptible refractory metals which are capable of operation at the high temperatures of interest.

During fiscal year 1969 endurance tests will be performed on a three-stage potassium turbine, potassium boiler feed pump, potassium corrosion loop, high temperature valves and high temperature electrical switchgear. Performance tests will be run on a single tube tantalum boiler equipped to study the boiling and vapor drying processes. In addition, turbine moisture removal techniques, boiler stability characteristics and the simulation of liquid metals with conventional fluids will be investigated.

An 8000 hour test on a newly developed advanced tantalum-based alloy, ASTAR 811C, showed that this new material at 2100° F. has 4 to 5 times the strength of the currently selected tantalum alloy and exhibits suitably low creep under operating stresses at temperatures up to 2600° F. A 6000 hour endurance test of an approximately half-scale model of an alternator stator showed that the electrical, magnetic and insulating materials, and the bore

seal, can successfully operate for very long periods at 1350° F. in ultra-high vacuum without degradation in properties or performance. During fiscal year 1969 the development and testing of high performance structural and electrical materials will be continued.

System steady-and-transient-state stability tests were performed for the first time in a small scale two-loop lithium-to-potassium Rankine cycle system with good results. Analytical system studies were performed with the objective of identifying suitable design point operating conditions. During fiscal year 1969 the small scale two-loop lithium-to-potassium Rankine cycle system will be subjected to a series of transient state tests with an analog reactor simulator slaved to the lithium heater. System design studies will be continued. Advanced concepts aimed at providing technology for lightweight components will be investigated.

Research is continuing on the technology programs associated with thermionic reactor electric power systems. The main parts of the program include: (1) analytical studies of thermionic reactor systems and their associated system components; (2) experimental test programs on current life and performance limiting problems and their improvement under high temperature and radiation flux, such as electrical insulators, materials properties changes, high temperature fuel stability, gas released and cesium reservoir control. This research will be continued in fiscal year 1969.

As part of a coordinated insulator test program, NASA will provide in fiscal year 1969 special thermionic insulators to Oak Ridge National Laboratory for inclusion in AEC's irradiation test program aimed at providing ceramic insulators satisfactory for use with in-core thermionic converters. Development testing of the components of an externally-fueled converter will be accelerated. A test-rig for investigating the control and stability aspects of a multiple-converter (liquid-metal-cooled) array will begin operation at JPL during fiscal year 1969 and investigation of problems associated with fission product venting of multiple-converter arrays will be started.

As a combined in-house and contractual effort, the Brayton cycle power conversion system technology program continues to be directed at the demonstration of the high component, subsystem and system performance needed for isotopic power. The present power conversion system utilizes the inert cycle gas fluid in gas bearings for simplicity of operation in a sealed system. However, long time operation of gas bearings in this hot environment must still be demonstrated.

During fiscal year 1968 a gas bearing equipped turbocompressor was operated for over 10 hours at design conditions of high temperature and speed. The gas bearings operated quite stably. Improvements to the bearing components have been incorporated to avoid bearing pivot rub noted during one of the tests. A compact gas bearing equipped 5.5 KWe turboalternator-compressor package will be delivered and placed on test during the latter part of this fiscal year.

During fiscal year 1968 other subsystem assemblies and components have been designed and fabricated. It is expected that subsystem and hot closed-loop system testing will be initiated during fiscal year 1969. Coordination with AEC on the high temperature isotope heat source has continued, and steps are being taken with their assistance for an isotope-Brayton power system demonstration test.

The major effort on isotope-thermoelectric power for space applications continues to be conducted by AEC which is developing the Snap–19 and Snap–27 generators for the Nimbus B and Apollo missions. NASA is continuing to evaluate isotope-thermoelectric and isotope-thermionic systems for potential space use. During fiscal year 1968 environmental tests, including shocks quivalent to 1000 g's were successfully conducted at JPL with tubular lead telluride compact thermoelectric converters. The good properties and performance of these converters will be further examined in fiscal year 1969, particularly with respect to cascading with silicon-germanium for higher performance coupled with high reliability. Life testing of typical Snap units and components will be continued during fiscal year 1969.

SOLAR POWER GENERATION

Major goals of the solar power generation subprogram are: (a) to devise radiation resistant solar cells, (b) to develop improved metal to solar cell electrical contacts, (c) to devise compact methods for stowing large solar cell arrays for launch and to develop reliable techniques for automatically deploy-

ing these large, lightweight arrays, (d) to devise new solar cells having greatly improved efficiency and reduced cost and (e) to develop advanced electrical components and circuits for battery charging, voltage regulation, processing, distribution and control of electric power on spacecraft and aircraft.

During fiscal year 1968 the first phase of a three phase program to achieve technology readiness of an advanced 20 watt per pound, 50 kilowatt folding solar cell array was completed and work on the second phase was initiated. In fiscal year 1969 work on the second phase will be completed and the third phase will be initiated. Phase three will consist of the assembly and test of a significant part of a 1250 square feet wing (the 50 kw array is composed of four identical 1250 square feet wings) of the solar cell array. Structural and deployment tests will be performed. The goal of 20 watts per/pounds is a fivefold advance over the solar cell arrays currently planned for use on the Apollo applications workshop and telescope cluster in the early 1970's. These significant weight reductions require the use of new structural concepts and materials. Beryllium is being investigated to provide the needed increase in stiffness to weight ratio. Methods for forming, milling, cutting and joining large beryllium structures are being developed.

In fiscal year 1968 research was continued toward a more radiation resistant silicon solar cell. The beneficial effect of lithium added as a trace impurity was first discovered in 1965. The action of lithium has been described as a "self-healing" process. Research is underway to determine whether the healing rate can be made sufficiently fast so that damage in space would be annealed as rapidly as it occurs. Laboratory tests have shown that certain lithium cells recover rapidly from intense doses of radiation, but subsequently deteriorate under room storage conditions. Substantial further work in fiscal year 1969 and subsequent years is needed to adequately explore the potential of this promising discovery.

During fiscal year 1969 research on new solar cell concepts will be continued with a view toward increasing efficiency, improving temperature tolerance and reducing manufacturing costs of large arrays. Work will continue on large area cadmium sulfide solar cells which show a potential for greatly reduced manufacturing cost. At the present time these thin film cells are only one-third to one-half as efficient as silicon cells and have not been able to withstand thermal cycling without degradation.

While notable progress has been made in the performance and reliability of spacecraft electrical power systems, a continuing need exists for improvements in the efficiency, weight, life and reliability of power conditioning, distribution and control equipment.

In fiscal year 1969 further research is needed on a versatile circuit for stable control of pulse modulated power oscillators, on a new concept for overload protection of electrical circuits and on an approach to solar array orientation and power transfer that would eliminate slip rings, brushes, gears and high-speed bearings which are trouble spots with existing designs.

CHEMICAL POWER GENERATION

Electrochemical devices—batteries and fuel cells—are used as primary power sources and as energy storage systems for launch vehicle and spacecraft power. The wide range of storage, frequency of use, rate of discharge and recharge, high-g impact, biological sterilization and temperature lead to several different types of batteries to better meet these requirements.

Research has continued toward batteries that can provide 5-year service life in 90 minute orbits. In this service the battery must survive 30 to 40,000 charge-discharge cycles. Substantial improvements in such battery components as seals and separators are needed. There is a critical need for valid methods of accelerating battery testing. Methods for accumulating the equivalent of 5-year service with actual test times of days or weeks must be devised to shorten the time and cost that will otherwise be required to develop such batteries. Continued investigation of accelerated test methods will be an important part of the fiscal year 1969 program in this area.

The energy storage problems of long lived synchronous satellites—24 hour orbit—are quite different from low orbit applications. In this case, only hundreds of charge-discharge cycles occur per year, but the energy storage device must retain its charge for longer periods. To satisfy these demands, work will con-

tinue in fiscal year 1969 on electrically rechargeable fuel cells, using hydrogen and oxygen as the means of energy storage. A "breadboard" assembly of rechargeable fuel cells will be fabricated and tested for performance and service life.

Preliminary results in fiscal year 1968 with rechargeable metal-gas batteries have been encouraging. Several dozen cycles were obtained with zinc anodes and oxygen-using cathodes. The metal-gas devices combine battery (zinc) and fuel cell (gaseous oxygen) technologies to give useful performance not available from batteries or fuel cells separately. Further work is needed in fiscal year 1969 on these metal-gas electrochemical systems.

The major effort on primary (essentially nonrechargeable) batteries is on sterilizable and impact resistant silver-zinc cells. An organic membrane, sterilizable battery separator was improved in its chemical and physical properties during the past year and evaluated in single cells for sterilizability. Having passed these tests, it will be incorporated in experimental batteries in fiscal year 1969 and evaluated. A new battery case material was found last year, which can survive the rigors of heat sterilization. This will be used in the evaluation program with epoxy sealant, while better methods of sealing the battery case to the top will be explored at the same time. A shock resistant battery design was found to be unsatisfactory; better designs are being sought.

Research on a free-electrolyte fuel cell will continue in fiscal year 1969. The free electrolyte is circulated outside the cell and can be cooled more effectively opening the way for larger fuel cell stacks and modules. Impurities swept out by the electrolyte can be removed with expected improvements in system life. More work is needed on this device, including improved methods of wetproofing the electrodes.

Electrochemical research has ranged from the compilation of critically evaluated electrochemical data (continuing) through exploration of gaseous electrolytes (completed) and electrode-less plating (continuing) to a study of electrolysis for regenerating reactants for lunar-based fuel cells. A university thesis on a novel construction of fuel cells that may lead to more compact systems will be investigated further in fiscal year 1969. An analysis of heat transfer in fuel cells was successfully applied to batteries and is expected to be broadened and generalized. Single-crystal alloy catalysts have been found that promise to be better than the best fuel cell catalysts available thus far.

SPACE ELECTRIC ROCKET TEST (SERT

	1967	1968	1969
Spacecraft and experiments development		$1,100,000	$1,500,000
Agena (launch vehicle procurement program)	($2,420,000)	(1,640,000)	(2,640,000)
Total (including launch vehicle)	(2,420,000)	(2,740,000)	(4,140,000)

SERT II is an extension of the SERT project which was initiated by SERT I launched in July 1964. SERT I was a suborbital flight to demonstrate ion beam neutralization in space. SERT II is planned as an orbital flight for a minimum of 6 months to evaluate ion thruster characteristics and performance during extended space operation and to investigate possible interactions with the spacecraft. SERT II represents the next major step in the development and acceptance of electric thrusters for prime propulsion of interplanetary spacecraft. Not only will a successful flight provide additional confidence for the adoption of electric thrusters for actual mission use, but much valuable information will be derived to assist in the designing of electrically propelled spacecraft.

Planned to be launched by a THORAD-Agena from western test range during calendar year 1969, the SERT spacecraft with experiments will be orbited together with the Agena vehicle. The Agena will provide the necessary electric power from a 1.5 kilowat solar array and $1,000,000 of fiscal year 1969 funds is required for the procurement of this solar array. A spacecraft support unit has been introduced into the design to simplify the interface between the spacecraft and the Agena vehicle. In addition, a gimbaling system has been adopted to vector the ion engine thrust to maintain spacecraft stability. Fiscal year 1969 resources amounting to another $500,000 are necessary for the spacecraft support unit and the thrust vectoring gimbal system.

SNAP-8 DEVELOPMENT

	1967	1968	1969
Development	$5,500,000	$7,500,000	$7,500,000

The objective of this technology project is to conduct the ground development of a 10,000 hour, 35 electrical kilowatt nuclear electric generating system suitable for space applications in the 1970's and beyond. Principal potential applications for SNAP–8 are large earth orbiting space stations, lunar exploration, direct TV broadcast satellites and ultimately manned interplanetary missions.

SNAP–8 is a joint NASA–AEC development with AEC responsible for reactor development and NASA responsible for the power conversion system and eventually for full system integration. SNAP–8 utilizes a mercury Rankine conversion loop to convert thermal power developed by a compact reactor into electrical power. The design approach places emphasis on maximum use of current state-of-the-art and provides flexibility to adapt to a range of potential missions with a minimum of changes in the system.

In current year 1966 the program was reoriented toward emphasizing component life development and system technology testing using the breadboarded power conversion system in order to solve the component problems encountered, particularly in the boiler and turbine. Hardware commitments for more advanced system testing were, therefore, deferred.

In the past year priority has been placed on developing solutions to the major life-limiting problems found in the boiler and turbine from previous development testing and on endurance testing in small component loops of the other major components of the power conversion system. During current year 1967 total test hours on major SNAP–8 components increased from about 23,000 hours for all previous years to over 80,000 hours, indicating a significant acceleration for the year in testing progress. This achievement reflected more component test loops brought on the line as well as better on-test experience. During this period the first SNAP–8 component, the lube/coolant pump, passed the 10,000-hour endurance test milestone.

The principal change made to the boiler and turbine to correct observed life problems was to substitute a more ductile material in the turbine rotors and stators and to replace the iron-based alloy in the boiler tube with tantalum. Tantalum has been fund to have no measurable solubility in mercury and is expected to reduce the previously experienced corrosion problems. Testing of a modifier turbine and a new boiler built with these new materials has been initiated and verification of the design is being obtained. In modifying the turbine the efficiency was also improved to assure a 35 kilowatt electric power conversion system output, and the improved performance has also been verified in test.

During the remainder of fiscal year 1968 it is planned to complete a long-duration test of the modified turbine and new boiler and to perform a post-test inspection of these components to assess progress in developing solutions to the life problems of these two components. Endurance testing of the other major components will continue and periodic examinations will be made of these components to assess their development status. Supporting investigations of scaled-down experimental boilers will be continued toward improving the understanding of full-scale boiler capabilities and limitations. AEC is expected to complete fabrication of the next SNAP–8 reactor in fiscal year 1968 and a long-duration power test of this reactor is scheduled to begin in fiscal year 1969.

The budget request for fiscal year 1969 provides primarily for the continued life development of the power conversion system components toward the 10,000-hour mark in component loops, and it is planned to complete a 2,500 hour demonstration of the life capability of all the major components in the breadboarded SNAP–8 power conversion system. Development of secondary components related to system startup and electrical control initiated in fiscal year 1968 will be continued. In addition, the existing breadboarded power conversion system will be used to perform transient tests of system startup, shutdown, and restart. Analytical studies will also be performed of a SNAP–8 power conversion system in a more compact configuration to provide guidelines for component development and system transient testing more nearly representing the conditions expected in future applications.

NUCLEAR ROCKETS—PROGRAM

Mr. EVINS. The nuclear rockets program is projected to go up from $54 million to $60 million. This is the one that the authorizing committee has reduced.

Dr. ADAMS. Yes.

Mr. EVINS. We can all understand the possibilities of nuclear power for long periods in space.

Dr. ADAMS. This nuclear rocket program has a very successful history, as I am sure you know. We just finished a major test in this past year. In the present fiscal year we are proposing development of a flight engine. The increase for fiscal 1969 of $6 million is associated with going forward with the development of components for this engine using basically the staff that is presently at work on the experimental phase.

EFFECT OF CUT BY AUTHORIZING COMMITTEE

I might say that the cut that we had in the authorizing committee was a very severe cut. It ended up at about $11.7 million. That virtually wipes out the entire program, not only the Nerva flight engine.

Of this budget $36 million is associated with completing work that has already been started years ago, associated with completing the tests on the engine systems, on the components and on the reactors.

Mr. WEBB. These are test engines now, not flight engines which he is speaking of.

Dr. ADAMS. Test engines to develop the information and data that would permit us to proceed with a flight weight engine.

Mr. EVINS. The Atomic Energy Committee is placing funds in this area. It is a joint operation.

Dr. ADAMS. Yes, sir.

Mr. EVINS. It is not wiped out, that is an inaccurate statement, I think.

Dr. ADAMS. Well, if you had the reduction that the authorizing committee came out with it would virtually wipe the program out. The NASA funded work is necessary to make the AEC work meaningful. It is a jointly funded program.

Mr. WEBB. The point is, I think, Mr. Chairman, that a good deal of this work is done under contract. If this were reduced to $11.7 million, you would hardly have enough to pay for termination of the work.

Mr. EVINS. You have $11,700,000 approved, plus what AEC is putting into the program.

Dr. ADAMS. Because of the interrelationship of the work funded by NASA with the AEC funded work, a NASA contribution of $11.7 million will not allow continuation of the program and termination will be required.

This will mean that our ability to develop an engine will be lost because of the disbanding of the specialized technical teams that have been built up over the past several years at considerable Government investment. As to carryover, there is no carryover other than that required for financing the first couple of months of the next fiscal year.

In the NASA funding, of the $60 million requested, $36 million is

required for completion of the precursor engine tests on equipment and components that have already been built or are under way from previous fiscal years and $24 million is required for flight engine developments.

JUSTIFICATION MATERIAL

Mr. EVINS. We will insert pages RD 16–1 through 16–7 at this point. (The information follows:)

OFFICE OF ADVANCED RESEARCH AND TECHNOLOGY—NUCLEAR ROCKETS PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the nuclear rockets program is to provide rocket propulsion systems for application to high-energy, high-payload missions of the future. In carrying out this objective, the AEC-NASA Space Nuclear Propulsion Office is conducting a detailed system-analysis, design, development and test program to provide an approximately 75,000 pound thrust Nerva engine of between 800–850 seconds specific impulse for flight status by approximately fiscal year 1976. This work is proceeding on the basis of data, designs, and experience established in the technology phase of the program.

The specific Nerva activities to be conducted in fiscal year 1969 include the completion of the technology phase of the Nerva program and continuation at an increased level of the design, development, procurement, and component testing of the approximately 75,000 pound thrust Nerva engine initiated in fiscal year 1968. Included in fiscal year 1969 will be the establishment of the Nerva engine detailed requirements and configuration, and facility modifications as needed.

In addition to Nerva, this program supports activities to advance the technology of nuclear rocketry with particular regard to specific impulse and duration. Effort will continue to be directed toward vehicle considerations, mission studies, and engine-vehicle interfaces. The activities in support of these advanced objectives are carried out primarily at NASA centers (Lewis and Marshall) and at the AEC's Los Alamos Scientific Laboratory.

The major justification for the development of the nuclear rocket engine is that it provides a major advancement in space propulsion capabiilty. The Nerva engine in a nuclear stage could increase the payload and enhance the efficiency and operational characteristics in a variety of potential missions. Some of the missions for which a Nerva-powered stage would provide operational and payload advantages are: large-payload, orbital-transfer missions; manned or unmanned lunar missions; unmanned solar-system missions; and, eventually, heavy-payload manned missions beyond the moon.

The Nerva-powered stage applied as a third stage of the Saturn V launch vehicle improves significantly its payload and mission versatility. For example, a nuclear stage would increase the lunar-landed payload by approximately 60–70 percent and allow direct flights to the surface of the moon to be accomplished in a single Saturn V launching. In addition, the nuclear third-stage increases the payload capability of the Saturn V for deep space missions by 100 percent or more. The energy capability of the nuclear stage can be employed to reduce trip times to distant planets by hundreds of days. These improved capabilities provided by nuclear propulsion in the third-stage of Saturn V can be utilized to improve the effectiveness of missions, to increase mission or payload reliability, to reduce the number of required launches, or to extend the spectrum of potential missions in the late 1970's and the 1980's.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$16,506,000	$15,000,000	$15,000,000
NERVA	34,162,000	35,000,000	41,000,000
NRDS operations	2,332,000	4,000,000	4,000,000
Total	53,000,000	54,000,000	60,000,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Marshall Space Flight Center	$1,650,000	$2,100,000	$3,000,000
Lewis Research Center	3,515,000	2,200,000	2,400,000
Space Nuclear Propulsion Office	47,835,000	49,700,000	54,600,000

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Rocket reactor research	$10,855,000	$9,800,000	$7,700,000
Nuclear rocket engine systems	3,901,000	2,600,000	3,800,000
Safety	150,000	500,000	500,000
Vehicle technology	1,600,000	2,100,000	3,000,000
Total	16,506,000	15,000,000	15,000,000

The supporting research and technology effort (S.R. & T.) supplies four basic needs: (1) general S.R. & T. data for current projects; (2) advancing basic technology for nuclear rocket engines and vehicles; (3) feasibility effort on advanced nuclear propulsion concepts; and (4) studies of special flight safety considerations of nuclear rockets.

Rocket-reactor research

This activity supports work in two general areas: first, in the area of advanced concepts and in the design studies of reactor concepts of interest for future applications; secondly, these funds provide for nozzle and propellant feed systems for use in the advanced technology reactor ground-test program at the Nuclear Rocket Development Station (NRDS).

Research will continue in fiscal year 1969 on advanced nuclear propulsion concepts such as the gas core nuclear rocket propulsion concept in which the uranium fissionable material is in a gaseous rather than a solid form. Results of this work have indicated that extremely high specific impulse is potentially attainable with this fuel. In-house capability and research is centered at the Lewis Research Center. Most of the work in this area, however, is carried out using the capabilities of industry and universities through contracts and research grants.

In the past, NASA has funded the development of a liquid hydrogen turbopump feed system used to test the high-power Phoebus-2 and the Nerva reactors. During fiscal year 1969, this system will be modified to meet the pressure and flow requirements of the test bed reactor experiments (Pewee-1) to be conducted by the Los Alamos Scientific Laboratory in fiscal year 1969 (under AEC funding). Propellants and pressurants in support of the research and development activities on turbopumps and nozzles for Phoebus reactor tests as well as the Phoebus and Pewee reactor tests themselves are provided by these funds.

Nuclear rocket engine systems

This research provides information for specifying characteristics of future generations of nuclear rockets as well as establishing a general base of information on the design and operation of components and engines. Engine component technology is the responsibility of NASA; the in-house effort is conducted by the Lewis Research Center with other work being accomplished under Lewis' direction by contractors and universities.

The major effort currently being carried out in this program is on the effects of radiation on nuclear engine components, materials, and systems.

The purpose of this work is the definition of the behavior of materials in a combined radiation and cryogenics environment. Such information supports all phases of the nuclear rocket program and is essential for the design effort. Other important efforts are improved instrumentation, fluidic control system components, and engine transient analysis.

Safety

Assuring the safety of all current and projected activities of the nuclear rockets program requires knowledge related to the new and unique problems

encountered. Most required information stems directly from the main stream technological development activities. Frequently, however, specially directed research and analysis must be undertaken in areas outside the normal reactor and propulsion discipline. Examples of work in progress or planned for fiscal year 1969 include exploration of the relation between propulsion requirements and astronaut safety; special problems of hydrogen safety; special facility requirements; and further analysis and conceptual design of measures to avoid or counter flight failures.

Vehicle technology

This subprogram activity provides basic design information which will assist the development of nuclear rocket vehicles for flight mission applications.

General flight system technology activities which were underway in prior years will continue. Areas of particular interest where research investigations will be conducted are propellant heating, radiation effects, and emergency propellant venting and reliquification of cryogenic propellants. This work is carefully coordinated with engine development.

NERVA

	1967	1968	1969
Technology	$34,162,000	$23,000,000	$16,800,000
Development		12,000,000	24,200,000
Total	34,162,000	35,000,000	41,000,000

The Nerva program in fiscal year 1969 includes the completion of the technology phase of the effort and increasing activities in the development of the flight-rated Nerva engine at a thrust level of approximately 75,000 pounds. These two elements of the program are discussed below.

TECHNOLOGY PHASE

	1967	1968	1969
Engine system component and subsystem	$14,426,000	$7,700,000	$3,700,000
Ground test and operations support	17,357,000	13,300,000	10,300,000
Propellants	2,379,000	2,000,000	2,800,000
Total	34,162,000	23,000,000	16,800,000

Engine System

During fiscal year 1969, effort will be directed toward finishing the test activities concerned with ground-test experimental engines. It is planned that the last phases of XE–1 testing will be accomplished and disassembly of that engine will be concluded. The XE–2 will be tested later in the fiscal year. The objectives of these tests include: checkout of the test facility, engine test stand No. 1 (ETS–1); evaluation of engine control systems; exploration of boot-strap startup data; mapping of engine performance at a variety of operating points; performance data on engine components at rated conditions; and determination of the requirements of engine afterheat removal.

Component and Subsystem

The remaining effort in technology will involve the completion of testing and delivery of the ground experimental engine components and subsystems.

Ground Test and Operations Support

This effort in fiscal year 1969 will be largely directed to the technology phase of the Nerva program. Engine test facility operations at the Nuclear Rocket Development Station are included in this heading. It also provides remote handling equipment, checkout and test equipment, and maintenance equipment for test operations. During fiscal year 1969, the engine maintenance assembly and disassembly facility (E–MAD) will be used to assemble the experimental engine assemblies and reactor experiments. Remote maintenance and disassembly

operations will also be conducted. Engine test stand No. 1 will be used to conduct the experimental engine (XE) tests. Operation support also provides for instrumentation, safety and product assurance activities.

Propellants

Funds provided under this heading will be used for procurement of propellants, primarily liquid hydrogen, required in various parts of the Nerva test programs.

FLIGHT ENGINE DEVELOPMENT

	1967	1968	1969
Engine system, component and subsystem		$8,070,000	$15,700,000
Ground test and operations support		3,930,000	8,500,000
Total		12,000,000	24,200,000

Engine System Development

Major effort will be underway on design and development of the flight-type Nerva engine system and its components. Engine systems analysis and optimization studies started in fiscal year 1968 will be completed. Continuing studies will be made of the interactions and interfaces between the engine and vehicle. Areas of particular design interest include radiation shielding requirements for tank-heating and life-support; mode of after-heat and thrust removal; the effect of space environment on engine and vehicle; propellant storage and pumping modes; launch-site considerations, etc. In fiscal year 1969, these design studies will be largely concluded. Direct input from Marshall Space Flight Center will support the contractor's activities in this area.

Component and Subsystem Development

Based on specifications developed for engine configurations and engine requirements, specific design, procurement and testing of components and subsystems will be underway in fiscal year 1969. These include the following:

1. Reactor subsystem: This effort is largely funded by the AEC and will be carried out at Westinghouse Astronuclear Laboratory. The components vital to successful development of this subsystem include reactor fuel elements, reactor-support hardware, mechanical and electronic control components, radiation-shielding components, and ground-support equipment.

2. Turbopump assembly (TPA): The design, development and testing of this assembly will be underway in fiscal year 1969. The facilities necessary to test components will be available during the course of the year, and testing of components will be initiated. Weldments and forgings for the TPA will be procured during fiscal year 1969 for component development testing as well as for the first engine, E–1. Machining and assembly of the TPA for initiating cold-drive, low-speed tests are also expected to be completed at the end of the year. Structural and dynamic testing will be initiated.

3. Thrust-chamber assembly: The U-tube nozzle developed under the Nerva technology program will be the basis for the Nerva nozzle design. The hot-bleed cycle will be used in Nerva, based on components and systems studies conducted during Nerva technology phase. Additional nozzle design activities associated with nozzle extensions and a nozzle skirt will be conducted. Nuclear, thermal and stress analysis on the thrust chamber assembly components will be conducted. Forgings for development nozzles and for use in bleed-port development testing in chemical firings will be delivered, and contour machining of the nozzles completed. Nozzle bleed-ports will also be procured during the year.

4. Lines, valves and actuators: The components fabricated and tested in the Nerva technology program will be the basic starting point for qualification of these components. Included in this category are the turbine-power control valve, turbine block valve, discharge shutoff valve, emergency cooldown valve, and the propellant shutoff valves. These will be redesigned or upgraded from the XE engine to provide the necessary reliability and weight required for a flight engine. These redesigned valves will be fabricated in fiscal year 1969 and leak, functional, timing response and cycle testing initiated. A new structural support coolant valve will be developed for the reactor support system to control coolant flow rate while maintaining a relatively constant bleed-flow rate off the

pump discharge. Detailed design of this valve and fabrication will occur in fiscal year 1969.

5. Thrust structure and attitude control: The design of these components, initiated in fiscal year 1968, will be underway and long-lead procurement begun. The detailed design of the thrust vectoring system will be completed in fiscal year 1969, and the components of the system will be fabricated to initiate development testing in early fiscal year 1970. Components included in the system for which fabrication will be initiated in fiscal year 1969 include gimbal bellows and remote joint, gimbal ring and ring bearings, remote structural connectors, and the thrust structure.

6. Engine control systems: The basic data for prototype control systems will be available from XE–1 testing, and systems requirements will be implemented by functional and detailed designs. Mechanical prototypes of flight-packed components will be fabricated and tested. Detailed design modifications to the existing ETS–1 facility engine control system and engine simulator will be completed in fiscal year 1969 and fabrication of a modification kit initiated.

Ground test operation and support

In fiscal year 1969, necessary modifications of facilities will be initiated at Aerojet for full-scale turbopump evaluation and for chemical test firings of nozzle bleed-ports. Modifications to ETS–1 for the Nerva engine will be in the design stage. Operational support also provides for instrumentation, safety and product assurance activities for Nerva development.

NUCLEAR ROCKET DEVELOPMENT STATION OPERATIONS

	1967	1968	1969
General site support	$2,183,000	$3,600,000	$3,600,000
Capital equipment	149,000	400,000	400,000
Total	2,332,000	4,000,000	4,000,000

The mission of the Nuclear Rocket Development Station (NRDS) is to provide a site for ground static testing of the reactors, engines, and eventually the propulsion modules or rocket stages associated with nuclear rocket development. The major users of the station are Aerojet-General Corp., Westinghouse Astronuclear Laboratory, and Los Alamos Scientific Laboratory, under the overall management of the AEC–NASA Space Nuclear Propulsion Office. The specific activities in fiscal year 1969, as covered earlier, include completion of XE–1 testing and initiation of the XE–2 test series.

Maintenance, housekeeping, and management functions must be provided at the site. These functions, taken together, constitute general site support. They include routine maintenance and operation of the facilities; for example, custodial services, maintenance of roads, grounds, and utility systems, and furnishing of utilities, building operating supplies, fire protection, and cafeteria services. Included also are the services of a support contractor to maintain and operate plumbing, electrical, carpenter, welding and machine shops as well as support facilities and equipment.

These funds will continue to provide for NASA's share of the general site operations, the major part of which is funded by the AEC.

Chemical Propulsion

Mr. Evins. Dr. Adams, you are asking for $36,700,000 for chemical propulsion. This is the only item in your advanced research technology program that is a decrease from previous years. Last year it was $37,250,000, but the year before it was $33,638,000. There is a decrease from last year. Is it because you have a carryover in this?

Dr. Adams. One reason we have a reduction in the request is the solid rocket program; there is a $400,000 reduction in that program. In addition, we are not proceeding with a number of other programs that we had previously planned on.

Mr. WEBB. We simply had to hold this level, Mr. Chairman, because of the policy to keep expenditures down in 1968 and 1969. There is important work to do in this field of propulsion, but we have kept this down, under that policy.

Mr. EVINS. Your justification says you have successfully completed the firings of three 260-inch large motors in fiscal 1967.

FACILITIES TO BE MAINTAINED

Mr. WEBB. This is true. The Congress did not continue the experimental work on the 260-inch solid motor last year. However, we still have the problem of how to get the most efficient logistic booster for work in earth orbit. The Saturn IB can launch about 40,000 pounds. It has been judged that the most efficient class of vehicle would be about 100,000 pounds. We could use an off-loaded Saturn V which would be quite expensive; it can launch almost three times that much. We would have to off-load it and reduce it and use it for 100,000 pounds, or we could uprate the Saturn IB, or the military forces believe they could uprate the Titan III. Now the 260-inch motor offers an alternative, and it may be the cheapest possible way to do it.

So we have put in this amount of money, $3,100,000, as a means of indicating to the Congress that we think we should allow ourselves the option to maintain the capability to manufacture these successful 260-inch solid rocket motors until we make a decision as to whether we will want to make a new booster based on them. It is really an estimate of what it would take to maintain this project in a competitive situation but not do further development work.

Mr. EVINS. This is one of your constant evaluations of the type, extent, volume, and degree of various kinds of fuels.

Mr. WEBB. Mr. Chairman, we have notified the authorizing committees that we would not spend this fund unless we and the Department of Defense agreed there was a need for such an efficient solid booster, and it was necessary to keep the facilities of the companies making it in a competitive position. We would come back and report to the committees before we made those expenditures.

JUSTIFICATION MATERIAL

Mr. EVINS. Place in the record pages RD 17–1 through 17–7.

(The information follows:)

OFFICE OF ADVANCED RESEARCH AND TECHNOLOGY—CHEMICAL PROPULSION PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The objective of the chemical propulsion program is to establish science and engineering technology that will provide a basis for developing advanced chemical propulsion rocket systems for the Nation's future space missions. This program covers research examination of fundamental concepts, obtains pertinent engineering data, develops design, fabrication and testing techniques, and demonstrates improvements in propulsion machinery resulting from research examinations by performing experimental system tests.

Three basic propellant system types are covered. These are liquid propellant, solid propellant, and hybrid propellant systems. Thrust levels range from several million pounds to millipounds. A propulsion technology base is prepared for launch vehicle stages, lunar and planetary landing and ascent modules, orbit and deorbit

maneuver engines, midcourse correction engines, attitude control engines, rendezvous engines, propellant settling thrusters, and personnel transport devices. In addition to improving the performance and flexibility of chemical propulsion systems, lowering the cost and improving reliability and safety are principal objectives of this work. Propulsion processes, engine design, engine materials, and fabrication techniques are studied along with measurements of propellant physical properties, combustion phenomena, a fundamental understanding of fluid mechanics processes, gas dynamics, solid mechanics and extremely high rates of heat transfer, and methods to control these are developed. The basic technological examinations are supported by complementary system demonstration programs. The total process of developing the technological basis for advanced propulsion system designs requires many years.

The technical projects under the chemical propulsion program are managed by NASA field centers, using unique in-house capabilities and facilities to support their work. Work at the centers is augmented by extensive use of competent academic and industrial capabilities under contracted work arrangements.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Supporting research and technology	$30,688,000	$33,750,000	$33,600,000
Large solid motor project	2,950,000	3,500,000	3,100,000
Total	33,638,000	37,250,000	36,700,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
John F. Kennedy Space Center, NASA	$49,000	$175,000	$150,000
Manned Spacecraft Center	514,000	1,120,000	900,000
Marshall Space Flight Center	5,200,000	5,890,000	5,800,000
Goddard Space Flight Center	496,000	540,000	450,000
Jet Propulsion Laboratory	3,923,000	4,774,000	9,645,000
Langley Research Center	2,316,000	2,553,000	2,658,000
Lewis Research Center	11,890,000	12,597,000	14,040,000
NASA headquarters	2,816,000	4,082,000	3,057,000
Western support office	6,434,000	5,519,000	----------

BASIS OF FUND REQUIREMENTS

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
Liquid rocket research and advanced technology	$11,687,000	$12,700,000	$12,600,000
Solid rocket propulsion research and technology	4,407,000	5,050,000	5,050,000
Liquid rocket experimental engineering	10,675,000	12,500,000	12,450,000
Solid rocket experimental engineering	3,919,000	3,500,000	3,500,000
Total	30,688,000	33,750,000	33,600,000

The liquid rocket research and advanced technology project performs broadly based research applicable to advanced liquid rocket propulsion concepts. Half of the approximately 160 tasks is in applied research, generally applicable to all liquid rocket engines; roughly one third is applicable to spacecraft engines. the remainder is oriented towards launch vehicle problems. Forty-five percent of the work is contracted with industry, 45 percent is done in-house and the remaining ten percent is accomplished in universities.

The applied research effort for fiscal year 1969 will include work in combustion, combustion stability, ignition, valve and seal technology, pump technology, materials of contruction, and fabrication processes. The goals are to define the potential for increased rocket system performance, reduced weight and cost, extended mission duration, and improved reliability of components. Advancement specifically related to long duration space missions of the future is emphasized. The information generated is published as engineering reports and handbooks applicable to both the aerospace and nonaerospace industry.

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The program in high-energy space storable propellants, such as mixtures of fluorine and oxygen or oxygen difluoride, with the light hydrocarbons or diborane serving as fuels, will include efforts in space ambient ignition, injector design for performance, chamber cooling, and nozzle altitude performance and analysis.

The programs examining the use of liquid hydrogen in rockets will augment work with subcooled and slush hydrogen, its handling and instrumentation applicable to it. These techniques will extend the time that hydrogen can be stored in space, or reduce insulation weight and spacecraft complexity.

Work will also assess the performance available from tripropellant combinations using liquid hydrogen, fluorine and lithium. Such tripropellant systems have demonstrated specific impulse performance in excess of 500 pound-seconds per pound. The continuing effort will be directed toward combustor simplification.

Work relating to launch vehicles will direct effort toward design and operating simplification of such equipment with a view to lowering future development and production costs. New reduced-cost methods of fabricating components will be examined. The transient thermal requirements of turbopump operation for starting engine systems that use cryogenic fluids will be determined and system design concepts will be developed to alleviate the operational and preconditioning constraints inherent in present equipment.

Solid Rocket Propulsion Research and Technology

The solid propellant research and technology program develops a base of data pertinent to the general application of solid propellant motors. It explores propulsion alternatives, tests performance and design, and resolves difficulties for solid propulsion systems.

The program in solid propulsion technology consists of 75 tasks. Forty percent of the funds are contracted with industry, 13 percent with universities and nonprofit institutions, and 47 percent is used within NASA.

The solid propellant research and technology effort has been structured to provide needed information on high performance solid propellant systems. This information covers kinetics of decomposition, chemical erosivity, combustion instability characteristics, physical properties of propellants and motor materials, sensitivity and hazards of propellants and their manufacture, processing procedures and characteristics. These data will permit evaluation of solid propellant systems for future mission development. Specific areas of concentrated effort are identified in the following paragraphs.

Controllable solid rockets now being tested under the experimental engineering program require extinguishable propellants, refinement in the knowledge of burning characteristics of such propellants, and improvement in hardware reliability, particularly for hot gas flow regulatory devices and ignition systems. The hybrid promises exceptionally high performance, restartability, and good space storability. Research on both these space rocket systems will be conducted.

Polymers are being developed to yield propellants with improved mechanical properties. The mechanical behavior investigation program is helping assure the structural integrity of solid rocket motors. Microwave technology will be investigated for use in nondestructive inspection of cast motors. Better knowledge of combustion processes and ignition transients in said rocket motors will permit more reliable igniter design and control of combustion-induced instability.

Liquid rocket experimental engineering

The liquid rocket experimental engineering work is largely system oriented. Improved components defined by the research and technology programs are designed, built, and assembled into working systems, usually "breadboard" models, so that component interactions may be studied under simulated operating conditions. New or unanticipated problems are often observed during these tests. These may require additional research effort at the component level. It is the purpose of such system tests to identify real performance potential, to define operating limits, to point up areas of technology which need further attention, and to assess the design methods, the fabrication processes, the test procedures, and the probable schedule, cost, and facility requirements of a potential hardware development project.

Launch vehicle systems.—The need for reduced-cost propulsion capability is apparent. NASA and the DOD have been engaged in a coordinated program aimed at improved hydrogen peroxide rocket engines. DOD will proceed with a breadboard systems demonstration of a high chamber pressure conventional noz-

zle engine configuration. NASA will support work on the combustion chamber of the aerospike engine, wtih both small scale segments and at a nominal thrust level 250,000 pounds, to establish the performance to be expected of this configuration and to work out problems of combustion-induced instabilities. Additional work effort will be aimed specifically at encouraging new concepts for fabricating low-cost propulsion equipment using the aerospike nozzle. Several new concepts in advanced turbomachinery will be investigated in model scale.

Space propulsion systems.—In recent years emphasis in our spacecraft program has followed two principal tracks: (1) improvement in the technologies of thermal protection to extend the capabilities of hydrogen fueled rocket systems to perform deep space missions, and (2) development of a new class of high density, high performance "space storable" propellants for use on long-duration space missions where low-density hydrogen use is impractical.

Oxygen-hydrogen systems are already operational as launch vehicles such as Atlas-Centaur and the Saturn vehicles. Technology needed to develop the capability for storing liquid hydrogen in space for extended durations is progressing rapidly. This work will greatly extend the usefulness of hydrogen-fueled propulsion stages. Significant progress has been made in demonstrating the operation and performance capability of fluorine-hydrogen engine systems, and in developing design criteria for liquid-fluorine propellant system components.

The space storable propellant combinations offer a unique combination of attractive characteristics, particularly suitable for deep space and planetary missions, both manned and unmanned. High performance, high bulk density, and suitable physical properties combine to render space storable propulsion systems strong contenders for planetary orbiters, landers, ascent vehicles, and earth return stages. The principal propellant combinations of interest are oxygen-difluoride or mixtures of fluorine and oxygen with either liquified hydrocarbon gases or diborane as the fuel. Efficient combustion has been obtained and cooling limits have been established for transpiration, regenerative and ablative cooling techniques. Deliverable engine performance including expected kinetic losses during nozzle expansion of the exhaust under space conditions will be determined shortly. Pump technology for this class of propellants has also been initiated. In fiscal year 1969, efforts will be initiated to design, fabricate, and test typical spacecraft engine systems, both pressure fed and pump fed. These engine systems will be "breadboarded" to provide the flexibility for making modifications, replacing components and evaluating alternate engine operational cycles, as improved designs are conceived.

Another critical area requiring attention is the actual storability potential of the space propellants. Simulated space environment chamber testing is planned to evaluate superinsulations, tank support and penetration design, shadow shield effectiveness, tank pressurization techniques, et cetra. The fiscal year 1969 work will determine those areas of insulation technology peculiar to the space storables and will lead to the eventual evaluation of complete propellant systems in simulated space chamber testing.

Auxiliary propulsion.—Sophisticated spacecraft require attitude stabilization; some also require small velocity changes for changing orbit or trajectory. Thrust requirements for auxiliary systems used to accomplish these purposes range from a fraction of a pound to several hundred pounds.

In the low-thrust area, monopropellant hydrazine has seen widened application. The simplicity of the single propellant system, with performance several times that of a stored high-pressure gas system, has led to its selection on a number of NASA and DOD stages and satellites. Work to improve the monopropellant state of the art through better understanding of the catalytic decomposition and improvement of catalyst materials will continue.

The low-density ammonia-hydrogen mixture resulting from hydrazine decomposition will be examined for use in pressurizing propellant tanks, driving auxiliary power turbogenerators, or for storage and later use to supply ultra-low-thrust attitude control nozzles.

Future large spacecraft and launch vehicle stages will utilize higher energy propellants for their main propulsion system. Demonstration of auxiliary systems utilizing the higher energy propellants is underway. Materials to allow zero-g positive expulsion of cryogenic liquid oxygen and liquid hydrogen have been tested and work on small thrust chambers for these propellants continues. A breadboard system demonstration is planned. Investigations of small thrust chambers utilizing the "space storable" propellants are being planned.

Solid rocket experimental engineering

The solid rocket experimental motor program supports tests of new motor configurations for launch vehicle, space, and auxiliary propulsion. Its goals and operations parallel the liquid rocket engine experimental program.

Launch vehicle propulsion.—Large solid motors can greatly extend the capability of existing liquid stages and vehicles and can result in large reduction in effective cost of launch vehicle systems.

The solid motor launch vehicle engineering project will investigate low-cost methods for applying materials or making motor parts. Specific examples are a trowel-on insulation for protecting large motor cases and roll-forging for making thick-wall, complex metal parts. Tough steel alloys, such as HY140, are being evaluated to increase reliability and reduce costs of large motor cases. These steels are tough enough to accommodate weld flaws and mismatches which normally would cause failure; hence cost of inspection and manufacture can be reduced, and test programs can be shorter.

Space propulsion.—The major advancements required for extending the use of solid motors for space propulsion are increased propellant energy content (specific impulse) and capability to be stopped and restarted. A restartable high energy solid motor has several cost attractive applications in unmanned missions based on small launch vehicles such as Scout, Delta, or Atlas. Experimental tests in fiscal years 1967 and 1968 established nozzle materials and insulation requirements for motors with restartable propellant. The program will continue into detailed design and initial protoype motor firings in fiscal year 1969.

A hybrid system based on a liquid oxidizer and a solid fuel (fluorine-oxygen and lithium hydride) has been analyzed for applicability in deep space missions such as planetary probes or planetary landings. The findings were that the controllability, high performance and space storability would make the hybrid motor a strong competitor for these missions. Accordingly the technology program was extended in fiscal year 1968 to design a prototype hybrid system. In fiscal year 1969 the work will test the nozzle, solid fuel charge and liquid oxidizer injectors. A heavy-duty mockup of the liquid tankage, valving, and other plumbing will be used initially. Following successful completion of these tests, combined flight weight elements will be designed and tested.

Auxiliary propulsion.—Solid auxiliary motors are widely used for retropropulsion to separate stages of vehicles, for astronaut escape systems, and for thrust to settle liquid propellants. Also included in this category are squibs, iniators, and incendiaries, used for many starting and separating devices in vehicles and payload. Support of this project enhances reliability of these propulsion devices.

One low-level thruster that appears useful is a solid wafer motor, which provides thrust on command in preset increments. It can provide midcourse correction of trajectory in a planetary probe mission at low cost. Testing of a prototype motor will be supported in fiscal year 1969.

Large solid motor project

1967	$2,950,000
1968	$3,500,000
1969	$3,100,000

Three test firings of the 260-inch-diameter, 75-foot-long large motor, were successfully completed by fiscal year 1967, with peak thrust of 5.9-million pounds produced in the last test. In fiscal year 1968 and fiscal year 1969, the large motor project entered a sustaining phase to preserve a competitive option between solid and liquid rockets for the boost stage of an intermediate vehicle of about 100,000 pounds payload in the event there is established a requirement for such a payload.

Aeronautical Vehicles Program

Mr. Evins. The next item is the aeronautical vehicles programs. This goes up from $66,800,000 to $76,900,000, an increase of $10,100,000.

Dr. Adams. Yes, sir. This increase is associated with two major activities. First, we are initiating an experimental engine to reduce noise. This was discussed yesterday; $7,500,000 is programed in this budget to initiate work on components for the purpose of testing out these components and finally assembling them together into an experimental engine which has low noise, as a design criteria, right from the beginning. This has never been done before in any previous airplane engine, because they have all come out of the military uses. The other part of the increase is associated with carrying out flight dynamics work with V/STOL aircraft in order to overcome this problem of control and operation of V/STOL aircraft. Ultimately we will integrate the new electronic systems which I mentioned just a moment ago into this aircraft to integrate the new system and make it easier for the pilot then to control this airplane.

Mr. Evins. Place pages RD 18–1 through RD 18–11 into the record.

(The information follows:)

Office of Advanced Research and Technology—Aeronautical Vehicles Program

program objectives and justification

The role of the aeronautical vehicles program is to provide through research in the disciplinary areas of aerodynamics, loads and structures, propulsion, operating environment, and flight dynamics continued improvements in the safety, efficiency, and utility of all classes of military and commercial aircraft. In order to supply industry with advanced data for the design of new aircraft, to seek the technological advances needed to develop safer and superior commercial and military aircraft and to provide the leadership in the generation of advanced aircraft concepts, the aeronautical vehicles program is organized with emphasis on the disciplines in the advanced research and technology category and supporting research in appropriate disciplines and proof-of-concept activities for general aviation, V/STOL, subsonic, supersonic, and hypersonic aircraft. Proof of concept activity is system integration research whereby full-scale operating systems are used to extend laboratory research in system elements. The programs in all these areas encompass work in materials, noise and sonic boom, operational aspects, propulsion systems, and airframe integration and the relationships which exist between the pilot and the total aircraft system.

As has been noted in previous program justifications, the XV–5A fan-in-wing aircraft, the tilt-wing XC–142A V/STOL transport, and the variable-sweep wing for the F–111 all appeared several years ago as promising NASA research concepts. Now, these aircraft, developed by the military, are part of the NASA's continuing flight research programs aimed at further exploration of the characteristics of such vehicles and for correlation with earlier NASA test results.

The NASA also conducts extensive wind tunnel tests, simulator studies, analyses, and flight investigations to aid in the solutions of problems of a developmental nature in support of military and civil aircraft procurement. This work is performed in cooperation with the Department of Defense and other Government agencies and with Government-sponsored contractors at the request of cognizant Government agencies.

Research in the aeronautical vehicles program in fiscal year 1969 will include studies directed to improved safety of general aviation aircraft; studies of lightweight propulsion systems for both general aviation and V/STOL aircraft; studies of advanced rotor and STOL concepts to increase the utility of helicopter and short-field aircraft; prototype developmental research directed toward minimizing fan-jet noise radiation and for quieter engines; studies of air-breathing propulsion cycles and engine components for advanced supersonic and hypersonic aircraft; and studies directed toward the overall improvement of flight safety through increasing operational flexibility including adverse or all weather conditions.

Experimental research and development aircraft and engineering test-pilot proficiency aircraft necessary to carry out and support the aeronautics effort are included under this program.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Advanced research and technology	$3,730,000	$13,440,000	$16,080,000
General aviation aircraft technology supporting research	200,000	450,000	520,000
V/STOL aircraft technology supporting research	5,550,000	7,417,000	9,600,000
Subsonic aircraft technology supporting research	6,100,000	6,780,000	15,100,000
Supersonic aircraft technology supporting research	14,040,000	24,175,000	24,220,000
Hypersonic aircraft technology supporting research	6,280,000	14,538,000	11,380,000
Total	35,900,000	66,800,000	76,900,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Marshall Space Flight Center		$380,000	$450,000
Jet Propulsion Laboratory	$52,000		
Ames Research Center	6,230,000	8,202,000	10,520,000
Electronics Research Center	94,000		
Flight Research Center	5,191,000	18,428,000	13,250,000
Langley Research Center	12,873,000	23,747,000	25,175,000
Lewis Research Center	10,109,000	13,269,000	23,435,000
NASA headquarters	1,351,000	2,774,000	4,070,000

BASIS OF FUND REQUIREMENTS

ADVANCED RESEARCH AND TECHNOLOGY

	1967	1968	1969
Aircraft aerodynamics	$700,000	$1,390,000	$2,385,000
Aircraft loads and structures	600,000	1,070,000	2,000,000
Air breathing propulsion	1,000,000	450,000	1,065,000
Aircraft operating environment	1,430,000	3,600,000	3,600,000
Aircraft flight dynamics	(1)	1,860,000	1,860,000
Aircraft support	(1)	5,070,000	5,170,000
Total	3,730,000	13,440,000	16,080,000

[1] Prior to fiscal year 1968 aircraft operating environment, aircraft flight dynamics, and aircraft support were called aircraft operating problems.

Aircraft aerodynamics

Much of the research in aircraft aerodynamics is configuration—dependent and oriented toward a specific class of vehicles and is therefore programed under the appropriate aircraft technology supporting research area. The balance, of a more fundamental nature or applicable to several aircraft classes, is carried out with aircraft aerodynamics funding under advanced research and technology. This research is a continuing effort on aircraft components and flow fields and associated boundary-layer phenomena throughout the aircraft speed range. It involves the formulation and refinement of applicable theories and calculative methods, the improvement of wind tunnel capabilities and other experimental techniques and the application of these tools to advanced aircraft technology.

The funds required are for both small and large-scale models, wind tunnel and model instrumentation and contracts for the operation of several wind tunnels and include the costs of NASA support of wind tunnel tests for the Department of Defense and the Department of Transportation.

Aircraft loads and structures

The loads and structures program area is aimed at a broad spectrum of problems common to several or all types of aircraft since there is a common design goal of lightweight efficient airframes which will withstand the operating environment with reliability and safety. Gust and maneuver loads, acoustic response, wing and tail, and panel flutter, fatigue, composite materials, thermal stresses are all specific problem areas in which research will be conducted.

Atmospheric turbulence effects on structural loads using dynamically scaled models for comparison with analytical results will be determined to evaluate means of suppressing dynamic structural response to this turbulence.

The failure of aircraft structures due to fatigue is a problem of increasing magnitude with the use of higher strength aircraft materials without a corresponding increase in fatigue resistance. The solution of fatigue problems is compounded by the need for real time testing of aircraft materials and components. With the recent occupancy of the new Fatigue Laboratory at Langley, real time fatigue research may be conducted on structural components such as box beams of sufficient size to realistically represent the complexities of actual aircraft structures, funding is thus required for testing equipment, instrumentation, and structural components.

Air Breathing Propulsion

The primary goals of this program area are to initiate and conduct investigations of propulsion components and system concepts, either not readily identified with a specific flight spectrum or else identified over a broad flight spectrum. Basic studies are conducted on inlets, compressors, combustors, turbines, nozzles, and materials to provide higher ratios of thrust-to-engine weight, higher ratios of thrust-to-engine volume, and lower specific fuel consumption along with minimization of air pollution due to engine operation. Since substantial gains in specific fuel consumption and jet noise reduction are possible with very high bypass ratio engines, the application of methane fuel, which has a higher heating value and higher heat sink capability permitting high turbine inlet temperatures, to this class of engines will be studied.

Basic studies will be continued on lightweight, high-speed shafting and gearing, techniques for reducing rotating machinery vibrations, aircraft/propulsion system integration and high-frequency response instrumentation for the measurement of engine dynamic characteristics.

Aircraft operating environment

The research in this program area is aimed at solving general problems associated with flight environment, flight safety, noise, flight instrumentation, and sonic boom. It involves theoretical analysis and laboratory and flight test experiments to validate current engineering procedures and to explore solutions to aircraft operational problems. The results provide the technological know-how for safer and quieter aircraft operations and the basic environmental data for application to specific classes of aircraft (for example: V/STOL, subsonic, and so forth).

Flight environmental research includes studies of warm air fog modification concepts, investigations of new means for detecting clear air turbulence, the analysis of turbulence data collected on test aircraft flown primarily for other program objectives, and support of National Severe Storms Laboratory programs related to electromagnetic characteristics of severe storms, turbulence intensity/radar reflectivity correlation.

In the flight safety area, the studies of turbine disk burst mechanisms being conducted at the Navy's Aeronautical Engineering Laboratory at Philadelphia using facilities assembled with prior fiscal year funds will be extended to include component part tests of large engines. Fuel ignition research as related to the problem of lightning strikes, the effects of lightning strikes on aluminum, stainless steel, and titanium aircraft structural components and on aircraft electrical systems, the possibilities of new inerting systems and fireproofing materials, control of aircraft on wet runways including tire tread design, wheel braking, and so forth, will be studied.

NASA aircraft noise alleviation research is a continuing effort directed primarily at means of minimizing engine noise at its source. A better understanding of the fundamentals of compressor and fan noise generation will be sought.

Fundamental information on the generation and propagation of noise from the exhaust jets of turbofan engines having high ratios of bypass to primary mass flows will be obtained. Particular emphasis will be placed on the low exhaust velocity range where the turbulence level of exhaust jets may be a dominant factor in noise generation, thus the experimental studies will be conducted under carefully controlled laboratory conditions with jet velocity and jet turbulence level as the main variables.

Aircraft night dynamics

Research in this area is directed toward obtaining a better understanding of the interrelationship between the pilot and the vehicle he controls. This includes improving methods for aircraft control, handling characteristics, and the improvement in the capability of ground and flight piloted simulators for handling qualities investigations of all classes of aircraft.

Among the studies planned are investigations to determine the technical feasibility of modifying airplane operational procedures to alleviate noise during takeoff and landing, to determine airplane control and guidance requirements which could lead to improved operational procedures related to the effects of reduced ceilings in approach and landing, and the study and integration of display requirements and control system criteria for terminal area operations.

Aircraft support

The NASA research centers use various aircraft in direct support of advanced research and technology programs. The maintenance, spare parts, and ground support equipment for these R. & D. aircraft and chase and proficiency aircraft which are used for various missions are included in this funding category.

GENERAL AVIATION TECHNOLOGY SUPPORTING RESEARCH

	1967	1968	1969
Disciplinary research (total)	$200,000	$450,000	$520,000

General aviation aircraft are rapidly assuming a position of increasing importance to the economy and are no longer restricted to hobby-type flying but include expanding air taxi and charter services which even fly U.S. mail. FAA projections are for a continuing rapid increase in this class of flying in the foreseeable future. The principal factors of concern in general aviation are first, safety; and second, utility.

The problem of safety is being aggravated by the fact that, as these aircraft become more a key mode of transport and less a hobby, the typical operator is one who is inclined to spend less time flying just to maintain proficiency. As performance increases, the operator finds himself more often in unfamiliar operational circumstances. The consequences of this are seen in the increasing number of accidents involving aircraft far from home in poor weather and also the number of cases where the pilot cannot deal with power loss.

NASA has examined these problems with industry and with the FAA and agreement has been reached that most of the R. & D. effort should be directed at examining the flight dynamic characteristics best suited to the class of pilots who are becoming increasingly involved in this type of flying. Attention will be given to wind tunnel and spin tunnel studies in the stall,poststall gyration and spin modes as well as improved lift systems to ease the approach and landing task in the high performance (executive jet) aircraft class and methods of achieving constant attitude landing flares. The correlation of flight data with wind tunnel data will provide the starting point for prediction of the handling qualities required for improved safety. Various stability and control parameters will be investigated including Dutch-roll damping, adverse yaw and trim compensation.

V/STOL AIRCRAFT TECHNOLOGY SUPPORTING RESEARCH

	1967	1968	1969
Disciplinary research	$5,550,000	$6,917,000	$9,150,000
Proof of concept: Rotating cylinder flap		50,000	450,000
Total	5,550,000	7,417,000	9,600,000

V/STOL aircraft have a great potential in an increasingly crowded and transportation dependent society. Their success, however, will depend on the ability to land and take off quickly, quietly, and precisely from small areas with great regularity. The problem is one of flight dynamics of the aircraft, of matching the machine and the pilot and in providing proper integration of propulsion systems which are for this class of vehicle also a primary means of control. To be successful, a V/STOL machine must efficiently convert its thrust-producing power into lift-producing power; propulsion and aerodynamics interact strongly and must be accomplished properly to achieve this. The NASA V/STOL supporting research program is therefore defined with these problems as a primary focus. Three lines of endeavor are being followed. First, a very substantial effort, through analysis, simulation and flight test, is being directed at defining those aircraft characteristics which will enable the requirements to be met. Second, those V/STOL types which have been tried are being carefully reexamined in the light of the requirements to identify those having the potential of meeting them through further modification or development. Those concepts which show potential will be subjected to further wind tunnel and flight tests to determine the penalties in complexity and performance which might be incurred. Third, a number of previously untried concepts are to be reexamined in this light.

Disciplinary research in V/STOL aerodynamics will be aimed at providing information primarily through wind tunnel model studies of new or improved V/STOL concepts of interest to the military or for potential commercial use. Studies will continue to gain a better understanding of V/STOL jet interference effects, tunnel wall correction and of ground effects on V/STOL aircraft. In the loads and structures area, studies of tilt rotors, nonarticulated rotors and matched stiffness rotors will be continued or initiated. The primary goals of the propulsion oriented research are to provide lightweight, high performance, quick response engines having satisfactory reliability, safety, low noise, and economics of operation which can be properly matched to the airframe. Extensive studies will continue to define more adequately the criteria for handling qualities requirements for V/STOL aircraft in the very low speed flight regime where the inherent aerodynamic stability and control is greatly decreased. These studies will use simulators and flight test vehicles as available and appropriate.

Full-scale wind-tunnel tests have been completed of a model aircraft using a full-span rotating cylinder flap as an efficient means of providing the powered lift required for improving propellor-driven STOL aircraft. The rotating cylinder flap will be tested by modification of an OV–10A aircraft being provided by the Navy.

SUBSONIC AIRCRAFT SUPPORTING RESEARCH

	1967	1968	1969
Disciplinary research	$1,700,000	$580,000	$1,850,000
Proof of concept:			
Aircraft noise	4,400,000	4,200,000	5,750,000
Quiet research engine		2,000,000	7,500,000
Total	6,100,000	6,780,000	15,100,000

Research on subsonic aircraft is oriented toward safety of flight and the reduction of noise. The class includes all of the commercial jet transports and many military types.

In the disciplinary areas, aerodynamics research will be aimed at studying the lift, drag, and stability characteristics of aircraft configurations most suitable for improved subsonic/transonic operation. Loads and structures research will examine the specific application of fatigue, buffeting, and aeroelastic studies to advanced commercial aircraft. Propulsion research will include an increase in support of long-neglected areas for fuel, combustor, and engine component efficiency studies to suppress the tendency of jet engines to smoke. The safe climbout and landing techniques for noise minimization, the refinement of flight instrumentation for more accurate measurement of airspeed at transonic speeds, and the meteorological environment of particular concern to operations at high transonic speeds will be studied. Flight dynamics research will be concentrated on continuing studies of aircraft control for flight through turbulence and will include both simulator and flight tests. The NASA has the

responsibility under the Government's national clear air turbulence program to coordinate studies of pilot aircraft response and to define means of alleviation of this critical flight safety problem area.

As its part of the interagency aircraft noise abatement program, the NASA has the primary responsibility for the research and development leading to the reduction of aircraft noise at its source. This has involved NASA in proof of concept activities in aircraft noise and the quiet research engine.

The aircraft noise proof of concept supporting research covers the work necessary to provide means for minimizing the noise radiated from the inlet and the fan discharge ducts of turbofan engines such as are now installed in presently operating commercial jet aircraft and research directed toward developing a more positive means for accurate flight path control which would be required to modify current operational landing procedures in order to minimize noise on the ground below the approaching aircraft. The fan compressor noise minimization program was initiated in fiscal year 1967, and in fiscal year 1968 has involved wind tunnel testing design and testing of boilerplate nacelle modifications. In fiscal year 1969, the final nacelle configurations will be constructed for flight proof tests on a 707-type aircraft and on a DC–8-type aircraft to provide a possible means for minimizing their noise output. The programs also include detailed analyses of the impact of such potential modications on operating costs and efficiency. Flight path control studies will be continued utilizing the 707 prototype aircraft in flight tests to study the concept of direct-lift control.

In fiscal year 1968, preliminary work will be carried out to define the scope and some of the hardware components of a quiet research engine. The second phase of this proof of concept, to be implemented in fiscal year 1969, will include detailed design work on the engine components and nacelle, small- and large-scale engine component fabrication and full-scale tests of compressors and fans designed for minimum noise. The component research will explore the potential noise improvements offered by compressor blade vane spacing and number of blades, tailored suppression nozzles, internal mixing devices, and various techniques of achieving low fan compressor tip speeds; such as, slotted fan/compressor blades, variable geometry stators, rotor speed control techniques, and such secondary factors as bearing noise all directed toward application to a high bypass (up to 8 to 1) 20,000-pound thrust engine.

SUPERSONIC AIRCRAFT TECHNOLOGY SUPPORTING RESEARCH

	1967	1968	1969
Disciplinary research	$12,040,000	$14,175,000	$19,220,000
Proof of concept: XB–70	2,000,000	10,000,000	5,000,000
Total	14,040,000	24,175,000	24,220,000

In NASA's aeronautical vehicles program in supersonic aircraft technology, supporting research is conditioned largely to meet the needs of two national activities associated with civil (SST) and military (FX, VFAX) supersonic aircraft. In general, the NASA program is designed to study potential improvements not incorporated in original designs because of high technical risks, to study problem areas which might be expected to become critical in later stages of vehicle development or operation, and to lay the groundwork for new state-of-the-art advances such as the SST or the F–111 have turned out to be.

The program to support the supersonic transport contains three major elements. The first, in direct support of the FAA and its contractors as the development proceeds, provides NASA facilities and/or technical support as detailed technical problems arise at frequent intervals. The second major activity is directed at problem areas which can be anticipated for the future. Among these are studies of the flight dynamics of the proposed design with a view toward aiding FAA in defining what these characteristics must be in detail. Management of an aircraft of this size and speed will represent a wholly new problem except for limited XB–70 experience. NASA considers it of utmost importance to supply this information, both to guide development and to form a basis for certification and acceptance. This research involves a substantial number of technical personnel, several sophisticated simulators, inflight and

ground based, and forms the principal objective of the XB–70 program. The third major activity is represented by the research directed at advanced or "second generation" supersonic transports. The NASA program is designed to explore the areas of technology which carry the potential of significant performance improvement but presently involve technical uncertainties. The principal area of research is, therefore, propulsion. Activities of a lesser magnitude are found in aerodynamics where, for example, a search continues for some means of alleviating sonic boom effects, in loads and structures where examination of high-temperature composite materials is carried out, and in operating environment where we are studying high altitude gust and temperature distributions.

The supersonic aircraft supporting research program contributes much to research in support of the military aircraft such as FX, VFAX, and AMSA. These vehicles also pose problems peculiar to their expected modes of operation. Rapid maneuvering at high speeds imposes problems of inlet-engine interaction. Demands for buffet-free high-acceleration maneuvers pose new problems in wing/configuration aerodynamics. The requirements for efficient subsonic loiter and efficient supersonic cruise at high and low altitudes create additional problems in aerodynamics.

In fiscal year 1969, measurements of the stability and control characteristics of the XB–70A and the evaluation of its handling qualities throughout the complete flight test envelope will be completed. Special tests will be performed to obtain additional information leading to an explanation of the major differences found between flight-measured characteristics and those obtained by theoretical prediction and wind tunnel techniques in fiscal year 1968.

Another area to be explored in fiscal year 1969 is the ground effect on the aerodynamic forces and moments in the landing configuration when close to the ground. This has not been accomplished on an aircraft of this size before. An important structural problem which has been noted during the flight tests of the XB–70 is the relatively large response to turbulence. A modal suppression system will be installed and flight tested to determine possible means of gust alleviation at supersonic speeds.

With the completion of the handling qualities program and the gust alleviation research program, the XB–70 flight research program will be completed. The funding requirement for the XB–70, in fiscal year 1969, will be for one-half year. The program is expected to be completed by January 1969.

HYPERSONIC AIRCRAFT TECHNOLOGY SUPPORTING RESEARCH

	1967	1968	1969
Disciplinary research	$3,400,000	$4,090,000	$4,780,000
Proof of concept:			
X–15	880,000	3,448,000	
Hypersonic research engine	2,000,000	7,000,000	6,600,000
Total	6,280,000	14,538,000	11,380,000

The possibility of achieving sustained, efficient hypersonic flight has not been proven, yet systems analyses of such vehicles based upon best available theory shows it to be a potentially economically sound transport mode. Verification of the theories is required and the NASA research program is designed to provide information against which the adequacy of the theories can be judged. The program is directed first at examining the most fundamental first order assumptions in aerodynamics, propulsion and structures. Questions regarding the soundness of analyses in other disciplines are deferred until these primary answers have been obtained.

The program contains continued studies of the aerodynamics of hypersonic flow, research on the behavior of structures subjected to extreme heating rates and inlet, combustor, nozzle, supersonic mixing, combustion and heat transfer in the propulsion area. Funding is required for wind tunnel models, computer programs, structural specimens and the various components of hypersonic engine technology for tests in the Propulsion Research Laboratory and the Plum Brook Hypersonic Test Facility.

The various experiments currently being carried on the X–15 research aircraft will be completed by the end of fiscal year 1968 or early in fiscal year 1969 and it

is not planned to operate the aircraft following the completion of these tests. Therefore no funding is required for the X–15 program in fiscal year 1969.

The hypersonic research engine proof of concept program was initiated in fiscal year 1965 as the result of an obvious need for information relating to propulsion systems operating at hypersonic speed in a real environment. The Garrett Corp. is proceeding with the design, development and construction of one flight weight regeneratively cooled research engine. A boilerplate engine will be under test in fiscal year 1969 at the Ordnance Aerophysics Laboratory in clean air up to Mach 5. The regeneratively cooled engine will be delivered to the Lewis Plum Brook Research Facility for research testing in fiscal year 1970.

NERVA I

Mr. JONAS. You put more money into NERVA I than you have used if you had been authorized to go forward with NERVA II; is that a correct statement?

Dr. ADAMS. We are doing NERVA I, Mr. Jonas, instead of NERVA II. Last year we came in and asked to go forward with NERVA II. We did not get the funds to do that. That led us to a decision to proceed with NERVA I which is a smaller engine. We were able to do that within the budgetary limitations.

Mr. KLEIN. There is much less funding in NERVA I than in NERVA II.

Mr. TALCOTT. But more is being spent for NERVA I this year than was spent for NERVA II last year.

Mr. JONAS. You are putting more money into NERVA I than you had planned to.

EVOLVEMENT OF FLIGHT ENGINE

Mr. WEBB. Let me see if I can explain this. We were developing a test engine that would never fly and a reactor to be tested on the ground. We are completing that work and merging the components of that work into the first beginnings of a flight weight engine. We would have wanted to finish the KIWI–NERVA experimental engine test on the ground. Therefore the increase in cost results because we are beginning the start of a flight weight engine and building on the work we would have had to do anyway to complete the previous test.

Mr. JONAS. That leads me to ask this: Isn't a lot of this money going to be wasted if the situation changes next year and we can fund NERVA II? Wouldn't it have been better to have just stopped the development of this engine at all until you could go forward with NERVA II?

Mr. WEBB. I think there are two policy questions here. The first one has to do with the building of additional facilities for test purposes. One reason the NERVA II project was not approved was that it would have required an expansion of the ground testing facilities. We requested $22.5 million for that last year. We can go forward with NERVA I at least throgh the engine phase without building additional ground test facilities, and that takes us considerably forward several years. On NERVA II, I would say that most of the cost we devote to NERVA I this year and next would not be recoverable if we decided then to abandon NERVA I and go to NERVA II.

Mr. JONAS. It is just like going ahead on a T model when you are not ready to go forward with the A.

QUESTIONS OF SIZE AND THRUST

Mr. WEBB. No; I think you would have to explain it in this way: With NERVA II we would have a big engine that would be able to give a large amount of thrust early in a flight and get up to very high speeds to go to the planets with large spacecraft or on logistic flights to the moon. With NERVA I we will have a much smaller engine but we will pass the same amount of hydrogen through it that we would through the bigger engine, so you would have a small thrust over a long period of time and you will get the equivalent performance for most missions. You will not get the high speed to go to the planets with men however.

Mr. JONAS. You are saying that even though NERVA II is later developed and is operational, there will still be a requirement for NERVA I?

Mr. WEBB. I don't think I would say that. I would say that if we wait 2 years to be in a position, as a nation, to indicate that we can increase the Saturn V carrying capacity, we will not then be in a good competitive position as a nation. The purpose of going ahead with NERVA I is not to accomplish a specific mission but to increase the lifting capacity and the utility of Saturn V.

Mr. JONAS. You can see what I am trying to be sure of, that you are not just marking time here spending money on NERVA I that we don't need to spend.

Mr. WEBB. No, sir. I have assumed we are not going to build NERVA II for a long time, and NERVA I will be a workhorse. I am also assuming we will be able to cluster NERVA I and get a larger capacity in that way.

Mr. JONAS. I am probably right in my assumption, if the situation changes and you can go forward next year with NERVA II. But if we are delayed 4 or 5 years on NERVA II, you are probably right.

Mr. WEBB. Yes, sir, that is right. Mr. Jonas, since I think we have passed the point of decision on NERVA II, I think it is not likely that we will go forward with NERVA II. I think if we embark on NERVA I we are going to develop that engine, most likely, and fly it. It will give us a substantial increase in capacity to the Saturn V and will permit us to say to the world we are not going to be leapfrogged by the large Russian booster, we have a nuclear stage under development. Now, we do it without having to spend the $22,500,000 to build structures on the ground.Those structures on the ground are the pacing item. You would have to build them first or you couldn't go first with NERVA II. Mr. Klein may have a different way of stating it.

MISSION CAPABILITY OF NERVA I

Mr. KLEIN. No; that is correct. I would like to amplify what Mr. Webb has said. The NERVA I will perform equally to NERVA II, for all of these missions that Mr. Webb refers to with the exception of manned planetary missions. So we have an equally capable system with NERVA II with that exception. I would also like to make it clear that what we are doing here is using the capability in terms of the staff and facilities that have been developed through a large Government investment, to move in a logical way into the next phase. It

is not a buildup of capability, it is making use of this investment that we have already made. There is sometimes a misunderstanding on this point because it is looked upon sometimes as a new start. In a sense it is, but in a very practical way it is not a new start; it is just a continuation into the next phase of a logical development plan. Therefore, a simple deferral is not possible because you will lose the technical capability in the interim. And the development work will have a very useful output at the end, a system that will, as Mr. Webb says, give a substantially increased capability in propulsion for this country.

Mr. WEBB. Mr. Jonas, another way you could look at it is that if you went up to a 200,000- or 250,000-pound engine you would have to develop larger pumps, compressors, larger units all the way through. The 55,000-pound engine that we have been testing has well developed components in it now. We can improve those, increase their efficiency up to 65,000 or 75,000 pounds without major investments in further development. So we will simply be taking what we have been running there for several years and have had great success with and begin to put them into reliable flight weight hardware of about the same size. That is much less expensive than to build the larger units that would multiply by about four times the power we have been using.

Mr. PRYOR. Would you yield?

Mr. JONAS. Yes.

NERVA I COSTS

Mr. PRYOR. What would you estimate at this time would be the total cost of NERVA I?

Mr. WEBB. You are speaking of the development of the engine independent of the later decision to put it into a flight weight stage?

Mr. PRYOR. Let's take the first one first, the engine itself.

Mr. WEBB. Could I call on Mr. Klein to give those figures?

Mr. KLEIN. The engine development estimate is $600 million over a period of about 8 to 10 years.

Mr. WEBB. And the stage development?

Mr. KLEIN. That would be approximately an additional $500 million. So that the two together add up to approximately $1.1 billion. By the "stage" we mean the propellant, the tankage, the guidance system, all of the other components that fit with the engine into a complete vehicle.

Mr. WEBB. If you put my Administrator's discount on those figures I would estimate by the time we are flying this in reliable form it would be about $1,500 million. Now, Dr. Adams, am I being too hard on this? I want to make clear this is a substantial development; it is worth the money; and the money will be spent over a substantial number of years, perhaps 10 years. Thus the amount per year is not large, but it is an expensive development.

Mr. JONAS. We are not playing with peanuts.

Mr. WEBB. No, sir, we are not.

Mr. KLEIN. It is the only significant advanced propulsion effort, though, in the country. It is our move forward in propulsion capability in this country.

Mr. WEBB. That is an extremely important factor. Here we are working with something that has the potential of being three or four

times as efficient as anything we have now in terms of specific impulse. So we are continuing with the new technology that has great promise beyond this specific item of NERVA I.

RUSSIAN INTEREST IN FUELS

Mr. TALCOTT. What stage are the Russians in in the development of nuclear power?

Mr. WEBB. You are getting into an area of quite high classification. I think I could say there have been several public statements of the Russians that indicate considerable interest in this and may indicate that they are proceeding in this field. I don't believe I could say more than that for the public record. They are not taking a position that they will limit themselves to less efficient fuels but are indicating very serious interest in these more efficient systems.

Mr. JONAS. While you are on this subject, what type fuel is their favorite?

Mr. WEBB. What they use in their first stages, Mr. Jonas, is roughly the same we use, RP–1, kerosene, like we have in the Saturn I–B and Saturn V. In all our upper stages we have gone to hydrogen. We do not see evidence that they have learned to use hydrogen in the same way that we have. The early capability of their boosters has been based on one and two stages, and then a quite efficient third stage developed later.

We are not as sure of the second stages as we are of the third. They have not gone to more efficient fuels at the same rate we have.

In 1959, when the country was worrying about Sputnik, our administration decided to develop the F–1 engine. We also decided to use hydrogen as a fuel and develop the J–2 engine. By the time we had to make our decision to expand in 1961, we already had, through research, considerable experience with liquid hydrogen as a fuel, and we capitalized on this and incorporated this technology in the development which started in 1960. There is no evidence that the Russians have moved with this rapidity in using efficient fuels.

SUPERSONIC TRANSPORT

Mr. EVINS. Let's take a look at the aeronautical vehicles program. What work is being done in cooperation with the Department of Transportation?

Dr. ADAMS. We have a great deal of work going on directly with the FAA which is, of course, a part of the Department of Transportation. We are providing data for the supersonic transport. This data comes from our facilities in the laboratories as well as from the flight program. The B–70 program has the primary purpose of getting data on these very large supersonic aircraft for the supersonic transport design.

Mr. EVINS. How many agencies are working on the supersonic transport? We used to appropriate in here for the FAA and the supersonic transport. Now, it is in a separate bill.

Have you made any study of the overall interagency costs?

Dr. ADAMS. We are doing research work, you see, that precedes the actual hardware development.

FAA has the responsibility for the development of that airplane.

Mr. EVINS. This was one of your earlier pioneer projects in NACA. Now it is in the FAA. Were you reluctant to give this up?

HISTORY OF SST DEVELOPMENT

Mr. WEBB. No, sir. Let me say a word about that. In about 1959, when the NACA group saw the possibility of a supersonic transport, they tested a large number of concepts, reduced them to four and provided funds, $500,000, to two contractors to see if they could design an airplane within those concepts.

Out of that came further work and a decision to develop a supersonic commercial transport.

At the time this was under consideration, I was requested by the Director of the Budget and by the President to give an opinion as to whether NASA could undertake to manage the development of this project. The Department of Defense did not wish to do so.

My point of view was that NASA was not an operational agency and this advanced research was our area; we could support the developmental area when it was assigned, and in the end it was assigned to the FAA to develop a prototype and fly it.

We are still in the area of advanced supersonic research. We are flying an F–111 out at the Edwards Research Center. We are working with the military, as indicated on RD–69, with FX, VFAX, and AMSA.

At the same time we are working on the specific problems of the supersonic commercial transport.

Mr. EVINS. You are working in the specific problem areas.

SST SIMULATOR AT LANGLEY

Mr. WEBB. Yes, sir. For instance, we have a simulator at Langley Field which is connected with the FAA installation at Atlantic City and we are able to fly the computer-generated characteristics of the supersonic commercial transport in the normal patterns on the airlanes to see what will happen.

We have a Lockheed Jetstar programed to simulate the characteristics of a supersonic transport for certain parts of the flight range. We are testing the theoretical calculations by flying the B–70 in conjunction with this and we will have, in effect, a flying simulator of certain parts of the supersonic commercial transport before it is built.

This is the kind of thing we do which generates data to be used by the contractor, Boeing, and permits FAA to form a judgment as to what they should do when they encounter a problem.

Perhaps Mr. Myers or Dr. Adams would want to add to that, but we have a specific role and it does not overlap and duplicate. Our work is used by them.

We are also the agency conducting the flight tests to determine the effect of the sonic boom and to generate specific information that can then be used to make regulations as to how much noise can be tolerated.

PROBLEMS CAUSE SST DELAY

Mr. EVINS. With all the research going on in the several agencies, we haven't come up with a solution yet. There is still research to be done and problems to be solved.

Mr. JONAS. How much can we cut this down now in view of the Boeing stretchout?

Dr. ADAMS. I think it will have just the opposite effect. There were a number of technical problems leading to that delay, and that delay will be a year or more.

We are being called upon by the FAA to help them in solving these technical problems that have caused the delay.

Mr. JONAS. You are going to have to help them get out of trouble.

Dr. ADAMS. Yes, so we will have to do a lot of things we didn't plan to do in this budget in order to help them out of that problem.

SNAP–8 PROGRAM

Mr. EVINS. Tell us about the SNAP–8 program.

Dr. ADAMS. The SNAP–8 program is currently in the test phase. All components except two have exceeded 2,500 hours of endurance tests. Two components; namely, the turbine and boiler, have been very difficult to design. We have experienced problems operating these at very high temperatures. We are now testing the turbine and boiler. We believe we have overcome the problems and we are anticipating having 2,500-hour tests on all components by the end of this current fiscal year.

Mr. EVINS. This fiscal year you will complete the testing of the individual components. Then in fiscal 1969 we will put all the components together?

Dr. ADAMS. In fiscal 1969 we will put all the components together and carry out a combined test of 2,500 hours. We need to have that 2,500-hour combined systems test before we can make a decision on the next phase of the program that would involve integrating the reactor with the system.

Mr. EVINS. How much is carried in the atomic energy development for the SNAP–8 development?

Mr. KLEIN. $6 million in fiscal year 1969, Mr. Chairman.

AERONAUTICAL VEHICLES PROGRAM

Mr. EVINS. In the aeronautical vehicles program, you are asking for $76,900,000.

The role of the aeronautical vehicles program is to provide, through research in the disciplinary areas of aerodynamics, loads and structures, propulsion, operating environment, and flight dynamics continued improvements in the safety, efficiency, and utility of all classes of military and commercial aircraft. In order to supply the industry with advanced data for the design of new aircraft, to seek the technological advances needed to develop safer and superior commercial and military aircraft, and to provide the leadership in the generation of advanced-aircraft concepts, the aeronautical vehicles program is

organized with emphasis on the disciplines in the advanced research and technology category and supporting research in appropriate disciplines and proof-of-concept activities for general aviation, V/STOL, subsonic, supersonic, and hypersonic aircraft.

Place this justification material in the record.

(The pages follow:)

JUSTIFICATION MATERIAL

RESEARCH AND DEVELOPMENT, FISCAL YEAR 1969 ESTIMATES—SUMMARY

Office of Advanced Research and Technology—Aeronautical Vehicles Program

PROGRAM OBJECTIVES AND JUSTIFICATION

The role of the Aeronautical Vehicles program is to provide through research in the disciplinary areas of aerodynamics, loads and structures, propulsion, operating environment and flight dynamics continued improvements in the safety, efficiency and utility of all classes of military and commercial aircraft. In order to supply the industry with advanced data for the design of new aircraft, to seek the technological advances needed to develop safer and superior commercial and military aircraft and to provide the leadership in the generation of advanced aircraft concepts, the Aeronautical Vehicles program is organized with emphasis on the disciplines in the Advanced Research and Technology Category and supporting research in appropriate disciplines and proof-of-concept activities for General Aviation, V/STOL, Subsonic, Supersonic and Hypersonic aircraft. Proof of concept activity is systems integration research whereby a full scale operating system is used to extend laboratory research on system elements. The programs in all these areas encompass work in materials, noise and sonic boom, operational aspects, propulsion system and airframe integration and the relationships which exist between the pilot and the total aircraft system as appropriate.

SUMMARY OF RESOURCES REQUIREMENTS

[In thousands of dollars]

	1967	1968	1969
Advanced research and technology	$3,730	$13,440	$16,080
General aviation aircraft technology supporting research	200	450	520
V/STOL aircraft technology supporting research	5,550	7,417	9,600
Subsonic aircraft technology supporting research	6,100	6,780	15,100
Supersonic aircraft technology supporting research	14,040	24,175	24,220
Hypersonic aircraft technology supporting research	6,280	14,538	11,380
Total	35,900	66,800	76,900

BASIS OF FUND REQUIREMENTS

Advanced Research and Technology

Much of the research in aircraft acrodynamics is configuration—dependent and therefore oriented toward a specific class of vehicles. It is therefore programmed under the appropriate Aircraft Technology Supporting Research area. Research of a more fundamental nature or applicable to several aircraft classes is carried out with aircraft aerodynamics funding. This research is a continuing effort on aircraft components and flow fields and associated boundary-layer

phenomena throughout the aircraft and speed range. It involves the formulation and refinement of applicable theories and calculative methods, the improvement of wind-tunnel capabilities and other experimental techniques and the application of these tools to advanced aircraft technology.

The loads and structures program area is aimed at a broad spectrum of problems common to several or all types of aircraft since there is a common design goal of lightweight efficient airframes which will withstand the operating environment and reliability and safety. Gust and maneuver loads, acoustic response, wing and tail and panel flutter, fatigue, composite materials, thermal stresses are all specific problem areas in which research will be conducted.

The primary goals of the air-breathing propulsion program area are to initiate and conduct investigations of propulsion components and system concepts, either not readily identified with a specific flight spectrum or else identified over a broad flight spectrum. Basic studies are conducted on inlets, compressors, combustors, turbines, nozzles and materials to provide higher ratios of thrust-to-engine-weight, higher ratios of thrust-to-engine volume, and lower specific fuel consumption along with minimization of air pollution due to engine operation.

The research in the aircraft operating environment program area is aimed at solving general problems associated with flight environment, flight safety, noise, flight instrumentation and sonic boom. It invloves theoretical analyses and laboratory and flight test experiments to validate current engineering procedures and to explore solutions to aircraft operational problems. The results provide the technological know how for safer and quieter aircraft operations and the basic environmental data for application to specific classes of aircraft (for example, V/STOL, Subsonic, etc.).

Research in the flight dynamics area is directed toward obtaining a better understanding of the interrelationship between the pilot and the vehicle he controls. This includes improving methods for aircraft control, handling characteristics and the improvement in the capability of ground and flight piloted simulators for handling qualities investigations of all classes of aircraft.

The Research Centers use various aircraft in direct support of advanced research and technology programs. The maintenance, spare parts and ground support equipment for these R&D support aircraft and chase and proficiency aircraft which are used for various missions are included in this funding category.

General Aviation Aircraft Technology Supporting Research

General aviation aircraft are rapidly assuming a position of increasing importance to the economy and are not restricted to the hobby type of flying but are a principal mode of transportation for individuals such as businessmen, doctors, etc., and also include expanding air taxi and charter services which even fly U.S. mail. The principal factors of concern in general aviation are first safety and second utility. NASA has examined these problems with industry and with the FAA and agreement has been reached that most of the R&D effort should be directed at examining the flight dynamic characteristics best suited to the class of pilots who are becoming increasingly involved in this type of flying.

V/STOL Aircraft Technology Supporting Research

V/STOL aircraft have a great potential in an increasingly crowded and transportation dependent society. The problem is one of flight dynamics of the aircraft, of matching the machine and the pilot and in providing proper integration of propulsion systems which are for this class of vehicle also a primary means of control. To be successful, a V/STOL machine must convert its thrust-producing power into lift-producing power very efficiently; propulsion and aerody-

namics must interact strongly and properly to achieve this. The NASA V/STOL supporting research program is therefore defined with these problems as a primary focus. Full-scale wind tunnel tests have been completed of a model aircraft using a full span rotating cylinder flap as an efficient means of providing the powered lift required for improving propeller driven STOL aircraft. The rotating cylinder flap concept will be tested by modification of an OV–10A aircraft being provided by the Navy.

Subsonic Aircraft Technology Supporting Research

Research on subsonic aircraft is oriented toward safety of flight, improvement of flight efficiency and the reduction of noise. In the disciplinary areas aerodynamics research required funding for new models, model changes, instrumentation for wind tunnel tests and the uprating of wind tunnel hardware. The research to be carried out will be aimed at studying the lift, drag and stability characteristics of aircraft configurations most suitable for improved subsonic/transonic operation. Loads and structures research will examine the specific application of fatigue, buffeting and aeroelastic studies to advanced commercial aircraft and the funding will cover the costs of models, instrumentation and structural/fatigue specimens. Propulsion research will include an increase in support of long neglected areas for fuel, combustor and engine component efficiency studies to suppress the tendency of jet engines to smoke and requires the procurement of the necessary components and materials to support the in-house effort. The safe climbout and landing techniques for noise minimization, the refinement of flight instrumentation for more accurate measurement of airspeed at transonic speeds and the meteorological environment of particular concern to operations at high transonic speeds will be studied. Flight dynamics research will be concentrated on continuing studies of aircraft control for flight through turbulence and will include both simulator and flight tests.

As its part of the Inter-Agency Aircraft Noise Abatement Program, the NASA has the primary responsibility for the research and development leading to the reduction of aircraft noise at its source. This has involved NASA in proof-of-concept activities in aircraft noise and the quiet research engine. A fan-compressor noise minimization program was initiated in FY 1967, and in FY 1968 has involved wind tunnel testing and design and testing of boilerplate nacelle modifications. In FY 1969 the final nacelle configurations will be constructed for flight proof tests on a 707 type aircraft and on a DC–8 type aircraft.

In FY 1968 preliminary work will be conducted to define the scope and some of the hardware components of a quiet research engine. The second phase of this proof-of-concept, to be implemented in FY 1969, will include large scale engine component fabrication and full-scale tests of compressors and fans designed for minimum noise.

Supersonic Aircraft Technology Supporting Research

NASA's Aeronautical Vehicles program in supersonic aircraft technology supporting research is conditioned largely to meet the needs of two national activities associated with supersonic aircraft; the supersonic transport and the military supersonic aircraft such as the F–111, FX, VFAX, and AMSA. In general, the NASA program is designed either to study potential improvements not incorporated in original designs because of high technical risks, to study problem areas which might be expected to become critical in later stages of vehicle development or operation or to lay the groundwork well in advance for new state-of-the-art advances such as the SST or the F–111 have turned out

to be. The program to support the supersonic transport contains three major elements; direct support of the FAA and its contractors, anticipation of future problem areas and the research directed at a "second generation" supersonic transport. The NASA program is designed to explore the areas of technology which carry the potential of significant performance but with advances involving technical uncertainties. The principal area of research is therefore propulsion. The supersonic aircraft supporting research program also contributes much to research in support of the military aircraft listed previously.

In FY 1969 measurements of the stability and control characteristics of the XB–70A and the evaluation of its handling qualities throughout the complete flight test envelope will be completed. Special tests will be performed to obtain additional information leading to an explanation of the major differences found between flight measured characteristics and those obtained by theoretical prediction and wind-tunnel techniques in FY 1968. Another area to be explored in FY 1969 is the ground effect on the aerodynamic forces and moments in the landing configuration when close to the ground. This has not been accomplished on an aircraft of this size before. An important structural problem which has been noted during the flight tests of the XB–70 is the relatively large response to turbulence. During FY 1969 a modal suppression system will be installed and flight tested to determine possible means of gust alleviation at supersonic speeds. As planned the flight tests of the modal suppression system will be completed by mid-Fiscal Year 1969.

With the completion of the handling qualities program and the gust alleviation research program the XB–70 flight research program will be completed. The funding requirement for the XB–70, which is the responsibility of the NASA in FY 1968 and in FY 1969 since the transfer of the aircraft to the NASA in March 1967, will be for one-half year. The program is expected to be completed by January 1969.

Hypersonic Aircraft Technology Supporting Research

The possibility of achieving sustained, efficient hypersonic flight has not been proven, yet systems analyses of such vehicles based upon best available theory shows it to be a potentially economically sound transport mode. Verification of the theories is required and the NASA research program is designed to provide information against which the adequacy of the theories can be judged. The program is directed first at examining the most fundamental first order assumptions in aerodynamics, propulsion and structures. Questions regarding the soundness of analyses in other disciplines are deferred until these primary answers have been obtained.

The various experiments currently being carried on the X–15 research aircraft will be completed by the end of FY 1968 or early in FY 1969 and it is not planned to operate the aircraft following the completion of these tests. Therefore no funding is required for the X–15 program in FY 1969.

The Hypersonic Research Engine proof-of-concept program was initiated in FY 1965 as the result of an obvious need for information relating to propulsion systems operating at hypersonic speed in a real environment. The Garrett Corporation is proceeding with the design and development and construction of one flight weight regeneratively cooled research engine. A boilerplate engine will be under test in FY 1969 at the Ordnance Aerophysics Laboratory in clean air up to Mach 5. The regeneratively cooled engine will be delivered to the Lewis Plum Brook Research Facility for research testing in FY 1970.

QUIET ENGINE RESEARCH

Mr. EVINS. In 1968, preliminary work will be conducted—this is under the subsonic aircraft—to define the scope and some of the hardware components of a quiet research engine. The second phase of this group of concepts to be implemented in 1969 will include large-scale engine components and full-scale tests of compressors.

We are trying to secure minimum noise. Are we making any progress in this?

Dr. ADAMS. Yes, we are, Mr. Chairman. There are two phases of this as we discussed the other day.

On the two phases of noise research, I wanted to make clear that one part has to do with modifying existing present-day engines to reduce the noise. The other phase has to do with the entirely new engine concept. We have some very encouraging data on the program which was started last year to reduce noise of existing aircraft.

HYPERSONIC AIRCRAFT

Mr. EVINS. How about the hypersonic aircraft? This is five times the speed of sound.

Dr. ADAMS. You will notice that the hypersonic program is showing a decrease. We had to make some very difficult decisions in order to allocate the funds.

Mr. EVINS. It is up from $6 million to $11 million in the last 2 years.

Dr. ADAMS. The increase in 1968 was largely associated with our taking over the funding responsibility from the DOD of on-going programs. From 1967 to 1968, the Air Force transferred the X–15 to us, and we had to take over the funding of its maintenance and operation.

In fiscal year 1969 we are going to phase out the X–15 program. We just do not have the funds to make the modifications necessary to continue that program.

Mr. EVINS. If there is no funding for the X–15, what are you going to use $11,380,000 for?

Dr. ADAMS. That is associated with ground-based work. We still are working on structural and propulsion concepts in the laboratory. These are essential for this type of aircraft, but we are not going to be able to carry those concepts into flight tests.

MACH 5 GROUND TESTING

Mr. WEBB. Mr. Chairman, I would like to say that what we are reaching for is a mach 8 engine. At mach 8, we could begin to think of launching into orbit from such an airplane which could come back then and land and be used over again.

With the X–15, we had hopes to get up to somewhere near mach 8 in the test. Phasing out the X–15, we dropped back to a mach 5 type of test on the ground, which is the highest speed that we can achieve for this kind of test. So, while we have to abandon the X–15 as the test bed for this, we think it is important to continue the development of the engine, and use the tests up to mach 5, which we are able to achieve without the X–15.

This is a long-range project. Nothing is expected to come out of this for several years. But, as it does proceed, and we get the feedback from all the other work we are doing, we may well, in a period of time, say 10 years, be able to launch from a vehicle that takes off from the ground, achieves mach 8, launches into orbit, then returns and is used again.

Is that too ambitious? Would you say 10 years is too unreasonable an estimate?

Dr. ADAMS. Well, before we really have that to use in practice, it might be a little more than 10 years, I would say.

Mr. WEBB. But this again is the kind of technology which pervades the national power position in many, many different fields.

As the world shrinks, much of the world is in the oceans, much is in the air and, of course, space is without limit. These technologies running together give us the ability to operate systems beyond our national borders that can be of very great value in the future, in my view; for national defense, for our position in the world, and for achieving stability in the world.

TRACKING AND DATA ACQUISITION

Mr. EVINS. Take a look at your requirement for tracking and data acquisition.

Place in the record, Mr. Reporter, RD 19–1 through RD 19–17.

(The pages follow:)

OFFICE OF TRACKING AND DATA ACQUISITION—TRACKING AND DATA ACQUISITION PROGRAM

PROGRAM OBJECTIVES AND JUSTIFICATION

The purpose of this program is to provide responsive and efficient tracking and data acquisition support to meet the requirements of all NASA flight projects. In addition, support is provided, as mutually agreed, for projects of the Department of Defense, other Government agencies, and other countries and international organizations engaged in space research endeavors.

Support is provided for manned and unmanned flights; for spacecraft, sounding rockets, and research aircraft; and for earth orbital and suborbital missions; lunar and planetary missions, and space probes.

Types of support provided include (a) tracking to determine the position and trajectory of vehicles in space, (b) acquisition of data from scientific experiments and on the engineering performance of spacecraft and launch vehicle systems, (c) transmission of commands from ground stations to spacecraft, (d) communication with astronauts and acquisition of medical data on their physical condition, (e) communication of information between various ground facilities and mission control centers, and (f) processing of data acquired from the space vehicles. Such support is essential for the critical decisions which must be made to assure the success of all flight missions, and, in the case of manned missions, to insure the safety of the astronauts.

Tracking and data acquisition support is provided by a worldwide network of NASA ground stations supplemented by instrumentation ships, aircraft, and selected ground stations of the Department of Defense. These facilities are interconnected by a network of ground communications lines, undersea cables, high frequency radio links, and communication satellite circuits, which provide the capability for instantaneous transmission of data and critical commands between spacecraft and the control centers in the United States from which the flights are directed. Facilities also are provided to process into meaningful form the large amounts of data which are collected from flight projects. In addition, instrumentation facilities are provided for support of sounding rocket launchings and flight testing of research aircraft.

The research and development appropriation provides funds for (a) the operation and maintenance of the worldwide facilities, (b) the procurement of equipment and modifications to adapt the facilities for new and changing flight project requirements, and (c) the investigation and development of advanced tracking and data acquisition equipment and techniques. The subsequent sections describe plans and related funding requirements to continue the tracking and data acquisition program in each of these areas during fiscal year 1969.

SUMMARY OF RESOURCES REQUIREMENTS

	1967	1968	1969
Operations	$195,050,000	$213,600,000	$239,800,000
Equipment	62,000,000	49,450,000	52,200,000
Supporting research and technology	13,800,000	12,800,000	12,800,000
Total	270,850,000	275,850,000	304,800,000

DISTRIBUTION OF PROGRAM AMOUNT BY INSTALLATION

	1967	1968	1969
Marshall Space Flight Center	$800,000	$400,000	$300,000
Goddard Space Flight Center	195,800,000	197,350,000	227,300,000
Jet Propulsion Laboratory	51,350,000	57,200,000	55,300,000
Wallops Station	5,750,000	6,400,000	6,800,000
Flight Research Center	1,900,000	2,100,000	2,100,000
Langley Research Center	2,250,000	1,900,000	1,600,000
NASA Headquarters	13,000,000	10,500,000	11,400,000

BASIS OF FUND REQUIREMENTS

OPERATIONS

	1967	1968	1969
Manned space flight network	$65,650,000	$70,200,000	$91,500,000
Satellite network	37,700,000	40,000,000	42,000,000
Deep space network	35,500,000	38,600,000	37,000,000
Other instrumentation	6,500,000	6,500,000	6,700,000
Communications	39,500,000	45,800,000	48,600,000
Data processing	10,200,000	12,500,000	14,000,000
Total	195,050,000	213,600,000	239,800,000

Manned space flight network operations

The primary function of the manned space flight network is to provide tracking, data acquisition, communications, and command support for NASA's manned space flight programs. The network (a) provides spacecraft tracking data which are used for orbit and trajectory determination and to initiate and verify orbital maneuvers, (b) receives telemetered information concerning the condition of the astronauts and the performance of the spacecraft, (c) communicates information to control centers in real time for critical decisions, (d) transmits commands to the spacecraft, and (e) records the engineering data from the spacecraft.

In addition to support provided for manned missions, selected stations of the network provide support to unmanned deep space and earth orbital projects of NASA and the Department of Defense. Based upon requirements for each mission, manned or unmanned, the manned space flight network (MSFN) and other resources of the Office of Tracking and Data Acquisition, such as the space tracking and data acquisition network (STADAN), the NASA communications network (NASCOM), and the deep space network (DSN), are called upon to provide support. Also providing tracking support, as required, are the Department of Defense (DOD), and the Australian Weapons Research Establishment (WRE).

The manned space flight network is a worldwide tracking and ground instrumentation system which originated with the Mercury program, was modified and expanded for the Gemini program and has been further modified and expanded for the Apollo program. Completed and fully checked out during fiscal year 1968, the MSFN by December 1967, has already successfully supported three unmanned Apollo missions. Testing and training is continuing to assure readiness for manned orbital and lunar flights.

The network consists of (a) 10 30-foot diameter antenna stations located at Cape Kennedy, Fla.; Bermuda; Antigua; Ascension; Canary Island; Carnarvon, Australia; Guam; Kauai, Hawaii; Guaymas, Mexico; and Corpus Christi,

Tex.; (b) three 85-foot diameter antenna stations located at Madrid, Spain; Canberra, Australia; and Goldstone, Calif.; and (c) one transportable 30-foot diameter antenna station presently located at Grand Bahama Island. In addition, five instrumentation ships and eight aircraft, operated by the Department of Defense, and three 85-foot diameter antenna stations of the NASA deep space network will provide support for Apollo. Secondary support will be provided by our NASA station at Tananarive, Madagascar; and by the Department of Defense stations at Point Arguello, Calif.; Eastern Test Range facilities; and White Sands, N. Mex., using existing equipment.

The station at Canton Island has been phased out and DOD support by two smaller ships used during Mercury, Gemini, and early Apollo flights will be terminated during fiscal year 1968.

The currently planned mission workload will require a limited second shift of personnel at the stations for Apollo support in fiscal year 1969. Lead-times associated with programing, simulations, and checkout result in overlap between actual mission support and the preparation necessary for subsequent missions. This is beyond the capacity of a single shift of personnel and dictates the buildup for the second shift which is being implemented in fiscal year 1968. The fiscal year 1969 budget includes funds for these additional personnel and is reflected in the increased request over fiscal year 1968 for manned space flight network operations.

The second area of increase over fiscal year 1968 is for DOD operational support. The DOD estimates for operating the Apollo ships and the Apollo range instrumentation aircraft in fiscal year 1969 reflect the first full year of operations for these ships and aircraft. Also included are funds to reimburse the Air Force Eastern Test Range for down-range instrumentation services heretofore provided to NASA without charge. This change is one part of the results of a study which was made by the Bureau of the Budget of the entire Air Force Eastern Test Range operation to determine an appropriate basis for NASA reimbursement to the Eastern Test Range for costs attributable to support of NASA's requirements.

Satellite network operations

The primary function of the satellite network is to support NASA's unmanned scientific and applications satellite programs. The network includes the electronic stations of the space tracking and data acquisition network (STADAN) operated by the Goddard Space Flight Center, supplemented by the optical camera tracking stations operated by the Smithsonian Astrophysical Observatory. The STADAN stations provide a ground system which (a) tracks each satellite, (b) determines the status of onboard systems, (c) commands the satellite functions, and (d) acquires stored or real-time data from the satellite. The optical camera tracking stations provide specialized services in precision orbital tracking as well as backup support to STADAN during launch and early orbit tracking of satellites.

STADAN stations are located at Fort Myers, Fla.; Mojave, Calif.; Quito, Ecuador; Lima, Peru; Santiago, Chile; Johannesburg, South Africa; Tananarive, Madagascar; Canberra, Australia; Fairbanks, Alaska; St. John's, Newfoundland; Winkfield, England; Rosman, N.C.; and Toowoomba, Australia. In addition a range and range-rate tracking system is located at Carnarvon, Australia, for specialized support.

Fiscal year 1968 marked the beginning of a full year of operating STADAN stations which had previously been modified or augmented to support increased program requirements. Modifications at Rosman, N.C., and Mojave, Calif., plus the new station at Toowoomba, Australia, provided excellent support for the applications technology satellite (ATS) program. At Fairbanks, the station capability—which had been augmented by the addition of a 40-foot antenna and a range and range-rate system—provided the increased support required for the observatory satellites.

In fiscal year 1967 and fiscal year 1968, funding constraints required several reductions in the level of support provided to the projects. Operations at the Mohave station have been restricted to ATS support only, only one of three telemetry links at the Quito station is being operated, and the Winkfield station support has been reduced to one telemetary link and launch phase support of OGO. Operations have been reduced at all stations in the optical network and the station in Florida has been closed. Support of some older satellites has

been terminated and other satellites are being reviewed for possible termination of support.

For fiscal year 1969, it is planned to operate the network at essentially the same level of support as fiscal year 1968. Since 16 new satellites are scheduled for launch in fiscal year 1969, there will be additional limitations imposed upon the data acquisition capability of the network even with the support reductions which have been effected. The increased funding required in fiscal year 1969 is related to the operation of special OAO equipment at selected stations, and additional personnel to operate the control center complex at Goddard Space Flight Center.

Deep space network operations

The primary function of the deep space network is to support unmanned lunar and planetary space flight missions. The network (a) provides tracking data which are used to determine and make midcourse corrections and terminal maneuvers to spacecraft trajectories, (b) acquires engineering telemetary data concerning performance of the spacecraft, (c) transmits commands to the spacecraft to execute the above functions, and (d) receives and records the scientific data which are acquired from the spacecraft. The network consists of stations located at Goldstone, Calif.; Woomera and Canberra, Australia; Madrid, Spain; Johannesburg, South Africa; Ascension Island; and Cape Kennedy, Fla. The DSN Ascension Island station will be closed and the remaining elements phased into the MSFN station at Ascension Island starting July 1, 1968.

The control center for the deep space network is the Space Flight Operations Facility (SFOF) located at the Jet Propulsion Laboratory in Pasadena, Calif. The SFOF: (*a*) receives information transmitted via ground communication from stations of the deep space network; (*b*) processes the data; (*c*) displays the resulting information so that mission directors and associated project personnel can analyze mission performance and make critical decisions in near real time concerning functions to be excuted by the spacecraft; and (*d*) transmits instructions to the stations for commands that must be sent to the spacecraft.

The deep space network workload peaked in the first half of fiscal year 1968 to meet the support requirements of the Lunar Orbiter, Surveyor, Mariner, and Pioneer programs. Completion of the Lunar Orbiter and Surveyor programs is allowing some reductions in the last half of fiscal year 1968 which are reflected in the fiscal year 1969 budget request. Staffing is being reduced at the stations, the SFOF, and in the network engineering area. The computer capability at the SFOF has also been reduced in fiscal year 1968 and will continue at this reduced level in fiscal year 1969.

The flight missions of the pioneer program will continue through fiscal year 1969. The Mariner Mars flyby missions are scheduled for launch in late fiscal year 1969 and ground support is required well into fiscal year 1970 for these missions. Support is also required for the Mariner V mission early in fiscal year 1969 as it returns to view in its orbit around the sun. In addition, three stations in the network, one each in Australia, Spain, and California, will provide full joint support for the Apollo manned lunar missions. In summary the deep space network and the SFOF must be staffed and equiped to support five Pioneer, one Mariner V, the Mariner E and G missions, and Apollo during the fiscal year 1969 time period.

Other instrumentation operations

Instrumentation systems are operated and maintained in support of sounding rockets and reentry vehicles launched from Wallops Station, Va.; and the Churchill Research Range, Canada; and for flight research programs of the Flight Research Center, California. General purpose tracking, telemetry, data handling, recording, timing, plotting, and communication systems are provided as well as special purpose fixed and mobile optical and sound ranging (acoustical) equipment.

The instrumentation at Wallops Station is operated by NASA contractors and by other Government agencies such as the Evirnomental Science Services Administration (ESSA), the National Bureau of Standards, the U.S. Navy, the U.S. Air Force, and the Military Sea Transportation Service. Funds requested for fiscal year 1969 will maintain a required level of effort which closely approximates that of prior years.

Mobile telemetry and optical equipment are maintained and operated along the eastern seaboard to support rocket flights from Wallops Stations. This downrange support is funded by Langley Research Center.

Instrumentation at the Churchill Research Range consists of general purpose tracking, telemetry, command and control, and associated systems required to conduct sounding rocket experiments at this high latitude location. The range is operated under the management of the National Research Council of Canada which shares the costs with NASA as a cooperative effort.

The Flight Research Center operates the aerodynamics test range consisting of facilities at the Edwards Air Force Base and two uprange sites at Ely and Beatty, Nev. Programs supported by these facilities include various research aircraft and lifting body projects.

Communications operations

The global communications system, which links together NASA's tracking stations and control centers, is operated by the Goddard Space Flight Center. Communication switching centers have been established at major locations such as Goddard, London, Honolulu, and Canberra, Australia, to maximize circuit sharing. Requirements in most cases are being met by providing alternate voice/data circuits instead of separate voice and data circuits, thereby reducing the total number of circuits needed.

In the Apollo program, the increased complexity of the missions and the number of vehicles to be supported require real time centralized mission control. To achieve the required centralized control, it is essential that there be highly reliable and large capacity communications links between a central facility and the remote stations.

These communications links are being provided by satellite as well as conventional means. Communications satellites will provide alternate voice/data and teletype circuits to the Apollo ground stations at Canary Islands; Ascension Island; and Carnarvon, Australia, and to the three Apollo insertion/injection ships located in the Atlantic, Pacific, and Indian Oceans.

The fiscal year 1969 budget reflects the cost for providing real time lunar television coverage from the Apollo spacecraft via the 85-foot antennas at Madrid and Goldstone to the Mission Control Center at Houston, Tex. In addition, new wideband service will be provided to the Madrid tracking complex via the new communications satellite earth station just outside Madrid to replace conventional services with a more reliable direct route. Most of the remainder of the increased budget request is for providing the increased capacity required for the heavier Apollo flight program in fiscal year 1969.

Data Processing Operations

Information received in the form of tracking and telemetary data from satellites and space probes must be processed into a form that is useful to both those performing the real time control of the space vehicle and those responsible for analyzing the scientific data acquired by the spacecraft.

Tracking data are processed to provide orbital elements which are used to supply stations with predictions on future passes of the spacecraft, and to provide position information that can be used by the scientific experimenters to determine where in the trajectory the scientific measurements were made.

Telemetry data must be processed to: (*a*) separate the information obtained from the various scientific experiments aboard the spacecraft, (*b*) consolidate information from each experiment, (*c*) apply the necessary scaling factors and calibrations of the measuring instruments, (*d*) determine spacecraft attitude, and (*e*) correlate measurements with the position data mentioned above. Processed data are the primary product of the spacecraft missions, and it is through reduction and analyses of these data by the experimenters that a better understanding of space is achieved.

Several projects, particularly those in the observatory and geodetic classes, require extensive premission orbit studies, including spacecraft position predictions and mutual visibility analyses. Studies are also required to work out operational methods and procedures to be used during the actual mission operation.

Support must be given to a wide variety of programs which vary from the small university explorer satellites to the large solar, geophysical, and astronomical observatories, and the applications satellites in the fields of communication and meterology.

The fiscal year budget request is based upon the workload which will result from previously launched satellites that will require continued support, plus additional satellites that are scheduled to be launched during the period. This will result in an increase in the orbital computations, telemetry data processing, and mission related computer support. The projected telemetry data processing workload, for instance, in fiscal year 1969 is estimated to be about 20 percent above the fiscal year 1968 workload in terms of numbers of tapes to be processed.

EQUIPMENT

	1967	1968	1969
Manned space flight network	$27,700,000	$21,650,000	$17,500,000
Satellite network	11,700,000	9,600,000	12,800,000
Deep space network	7,500,000	9,000,000	12,000,000
Other instrumentation	4,000,000	4,200,000	4,300,000
Communications	6,000,000	3,200,000	3,000,000
Data processing	5,100,000	1,800,000	2,600,000
Total	62,000,000	49,450,000	52,200,000

Manned Space Flight Network Equipment

In calendar year 1967, implementation of the Appolo support capability was completed at the manned space flight network land stations at Goldstone, Canberra, Madrid, Canary Islands, Antigua, and Grand Bahama Island. Concurrently, modifications of eight Apollo range instrumentation aircraft (A/RIA) were completed by the Air Force Electronic Systems Division, and three of the five Apollo instrumentation ships were completed by the Instrumentation Ships Project Office of the Navy. Completion of the remaining two, including the satellite communication capability, and final tests of the ships' systems will be accomplished before the end of fiscal year 1968. With the conclusion of these activities, all facilities of the manned space flight network will have been augmented with the basic capability for Apollo support.

During fiscal year 1968, activity has been increasingly devoted to assuring manned space flight network readiness to provide effective and reliable support for Apollo. This effort will be continued in fiscal year 1969.

The capability of the network to accomplish lunar distance tracking has been tested by using Lunar Orbiter spacecraft as tracking targets after completion of their primary scientific mission objectives. These tests with the Lunar Orbiter spacecraft have demonstrated that the operational accuracy of the network's new unified S-band (USB) systems is sufficient for the stringent requirements of the lunar phases of the Apollo mission. The successful support of the recent Apollo 4 (AS–501) mission verified the compatibility of the new network systems with the equally new Saturn V launch vehicle and the Apollo spacecraft.

In addition to validation of the network's basic capability, a primary goal of the tests with Lunar Orbiter and the early Apollo mission support is to determine any subsystem operational shortcomings and to identify any failure-prone subsystems. This type of effort will continue throughout calendar year 1968 as part of the continuing support of the Apollo earth-orbital missions and through tests with the test and training satellite (TT–1). The fiscal year 1968 and fiscal year 1969 budgets include funds for the necessary design and implementation of equipment modifications as a result of these tests to assure station and network readiness for effective and reliable support of the Apollo lunar missions.

Replacement of the remaining Gemini pulse code modulation (PCM) systems is the most significant system improvement identified as necessary by analysis of the results of calendar year 1967 test data. These systems, which were designed to support the simpler requirements of the Gemini program, can only be reprogramed by manual reconfiguration of complex patchboards. Manual repatching is inherently mistake-prone; and, more particularly, the time required for changing the patchboards significantly increases the time required to reconfigure the stations' data systems in accordance with the differing requirements of each Apollo mission phase. The Apollo PCM systems, installed as part of the basic augmentation of the network for Apollo, are reprogramed quickly and reliably by using a library of magnetic tapes on which the neces-

sary programs are stored. Funds are included in the fiscal year 1969 budget to replace the remaining Gemini PCM systems with the new Apollo models, and to correct minor deficiencies in equipment capabilities as they are identified in the forthcoming mission support.

Tracking and data acquisition requirements for missions in the Apollo program vary from mission to mission depending upon mission objectives, flight plans, and the requirement to investigate special problem areas in the spacecraft as they are encountered on the previous flights. In general, it is necessary to make changes in or augment network equipment to enable support of these varying requirements. Such changes are anticipated in all systems areas and funds are requested in fiscal year 1969 for procurement of equipment at the system and module levels to provide for these mission to mission changes.

During fiscal year 1969, the network will be heavily engaged in mission support. In such an environment, a continuing effort will be necessary to maintain the support capability throughout the flight program. Accordingly, funds are requested in fiscal year 1969 for equipment to be used in the training of station personnel, for minor facilities modifications, and for equipment and services necessary for off-line monitoring and analysis of station and system performance.

The broad spectrum of medical, science, and technology experiments now contemplated for Apollo applications program (AAP) missions in calendar years 1970 and 1971 will require improvements in data handling capability at the network stations. Currently, most of the stations are equipped with three PCM systems to provide the decommutation capability necessary for Apollo mission control operations. The mission control operations for crucial phases of AAP missions will require the same level of support provided Apollo. Thus, additional PCM systems are required for the increased experiment support required for these AAP missions. Accordingly, funds are included in the fiscal year 1969 budget to provide one additional PCM system at each of the network stations.

Funds also are requested for network support to cover the engineering effort required for system checkout, provision of standard test equipment, continuation of the test and training satellite capability, and reduction of network ADP leasing costs by purchase of computer input/output components used for evaluating network performance during mission operations. Also included are funds for procurement of module spares needed to preclude long periods of station downtime during missions.

Satellite Network Equipment

The equipment program for the satellite network in both fiscal year 1968 and fiscal year 1969 has been constrained to a sustaining type effort with empasis on improved utilization of existing equipment and replacement of older equipment. Funding constraints in fiscal year 1968 have resulted in the deferral of several items into fiscal year 1969.

The major items deferred from fiscal year 1968 have been the station technical operations control (STOC) consoles which are intended to centralize many of the individual routine operations at the stations. These consoles will provide both a related savings in manpower and a more rapid turnaround time between satellite passes. With a reduced turnaround time, more satellite passes can be supported with existing equipment.

As part of the replacement program, fiscal year 1969 funds are needed to complete the procurement of solid state command transmitters and command encoders. The changeover to solid state devices from the vacuum tube equivalents will be completed with the fiscal year 1969 procurement. Other replacement items include elements of the initial VHF range and range rate tracking antennas to correct deficiencies, broadband feeds for the 85-foot antenna sites, and replacement of the existing command antennas that have been in use since 1960.

To meet specialized or unique mission to mission changes, equipment is needed at both the stations and the control centers. Typical items in this category are wideband receivers for Nimbus-D, sequential decoders for IMP-H, and display/control equipment for ATS-E and OGO-G. In addition, computer peripherals are needed to interface with the recently acquired third generation computer system at Goddard Space Flight Center for mission control of the complex OAO program, for orbit determination of the many and varied satellite programs, and to provide back-up to the manned space flight network computer complex.

Funds are also included in the fiscal year 1969 request for the more routine

types of effort associated with sustaining a global network. These include minor repairs and alterations, test and calibration equipment, and specialized non-expendable spare parts and components.

Deep Space Network Equipment

The fiscal year 1969 budget request reflects an increase over fiscal year 1968 to provide for new capability to meet the more demanding support requirements evolving for the planetary programs in the early 1970's. To meet these requirements, effort will be directed toward the development and testing of various prototype systems which will have general purpose application to the various planetary programs and minimize specialized project equipment requirements.

The long leadtime implementation of a high power transmitter capability at the Goldstone 210-foot antenna site has been initiated in preparation for missions in the early 1970's. Procurement of portions of this system was started with fiscal year 1967 funds and will be completed in fiscal year 1969.

A standardized telemetry demodulation system for use by all planetary projects is being introduced into the network commencing with the Mariner 1969 mission. This system is being procured with fiscal years 1968 and 1969 funds.

A prototype system combining the tracking data handling and planetary ranging functions will be developed to fulfill new planetary flight trajectory data requirements. The fiscal year 1969 budget includes funds for the initial procurement of operational units for the ranging portion of the system successfully demonstrated during the Mariner V mission using experimental hardware. The present tracking data handling equipment which was designed some 10 years ago is required to be replaced and will be integrated with the ranging system.

In the past, equipment unique to a single project has been used in the DSN for the generation and verification of commands sent to the spacecraft. Prototype general purpose equipment for this function, applicable to future missions, will be used in support of the Mariner 1969 mission. This equipment will also provide a direct, automatic command capability from the space flight operations facility (SFOF) and allows prompt and more reliable recovery action when unplanned flight conditions occur. This capability is not available with the present systems. Funds are included in the fiscal year 1969 budget for the procurement of this equipment.

Other improvements planned for fiscal year 1969 funds in support of the Pioneer and Mariner projects include the installation of advanced, more sensitive, receiving equipment on the 85-foot antennas. Temporary modifications of existing equipment were implemented at two 85-foot antenna sites during fiscal year 1968. These improvements, along with special receiver innovations, increased the support period on Pioneer from 6 to 14 months by allowing the spacecraft to be tracked to considerably greater distances. It is planned to augment the 85-foot antenna sites with permanent similar improvements with fiscal year 1969 funds to insure continued operational reliability.

Also planned for fiscal year 1969 is the procurement of improved cooled cryogenic masers for all stations and operational precision time synchronization equipment at three prime locations. These improvements were originally planned for fiscal year 1968; however, due to the more urgent need to support the new Mariner fiscal year 1969 telemetry data processing requirements, they were deferred.

Estimates included in the fiscal year 1969 request will provide for sustaining the network equipment at the necessary levels of reliability; primarily those systems that have been used extensively for the past several years. Examples include antenna and servo components, calibration and test equipment, recorders, microwave components, cabling, and power generation and distribution equipment which requires repair and replacement due to performance and reliability considerations. In addition, funds are included to accommodate the mission-to-mission changes, engineering improvements, and the necessary module spares provisioning for insuring rapid correction of malfunctioning equipment.

Other Instrumentation Equipment

A wide variety of fixed and mobile equipment is used to provide instrumentation support for sounding rockets and reentry vehicles launched from Wallops Station and other locations, and for flight research projects conducted at the Flight Research Center.

At Wallops Station, these funds in fiscal year 1969 will sustain existing capability by the provision of maintenance and spare parts, the procurement of

nonrecoverable flight hardware (antennas, transponders, command/destruct receivers, and small test rockets for calibrating ground support equipment) and the replacement of the surplus World War II SPS–12 range surveillance radar by a new Federal Aviation Administration (FAA) developed surveillance radar. To improve utilization of existing capabilities, the mobile range facility will be augmented with equipment to permit reliability checks in the field when the facility is operating in remote areas.

During fiscal year 1969, the Flight Research Center will complete conversion of the aerodynamics test range radar systems from S-band to C-band frequencies. Fiscal year 1969 funds are required for integration of the system into existing instrumentation, and for associated ground support and test equipment. At Langley Research Center, fiscal year 1969 funds are required for completing the updating of telemetry systems initiated in fiscal year 1968.

Communications Equipment

During fiscal year 1968, a major modification was undertaken to equip the switching centers to handle high speed data transmission required for Apollo. The major effort in fiscal year 1969 will be to add this equipment to the Madrid switching center. The addition of Madrid to the high speed data network will permit improved circuit utilization and a relative savings in circuit costs.

Also included in the fiscal year 1969 budget is equipment which will allow automatic measurement and reporting of data circuit characteristics. With increased data speeds of up to 7,200 bits per second, and the need for better quality data, the automatic equipment will be capable of encoding the circuit measurements into standard data impulses suitable for input into computers. Analysis of the measurement and display of the data by computer will allow automatic reporting of circuits whose measured characteristics fall below the standard for data transmission.

The fiscal year 1969 request also includes funds for replacement of equipments for telephone and teletype systems at the overseas stations, for small parts used in the fabrication of prototype assemblies such as monitor and display consoles, and for the spare parts to sustain the network.

Data Processing Equipment

The operational data processing equipment requires a continuing program of minor redesign, modification, and improvement, as well as normal maintenance and repair. While the data processing lines are designed to be as flexible as possible, changes and updating are necessary to meet the requirements of new programs and to accommodate mission-to-mission changes within existing programs. Changes are directed toward accelerating the reduction of data and thus preventing the acquisition of new processing lines. The fiscal year 1969 budget includes funds to provide the components necessary for these modifications and improvements.

The fiscal year 1969 increase is required because of the growing data processing workload. The computers used for processing of the telemetry tapes require additional memory units and associated equipment to increase the speed with which data can be processed. The memory capacity of these computers is at the present time the limiting factor in the data processing capability at Goddard Space Flight Center.

SUPPORTING RESEARCH AND TECHNOLOGY

	1967	1968	1969
New systems	$644,000	$685,000	$1,350,000
Integrated systems analysis, development, and test	3,622,000	2,916,000	3,320,000
Antenna subsystems	1,598,000	1,505,000	1,080,000
Receiving and transmitting subsystems	2,426,000	2,481,000	2,250,000
Data handling and control	1,822,000	1,920,000	1,580,000
Data processing and reduction	1,784,000	1,660,000	2,090,000
Spacecraft subsystems	1,904,000	1,633,000	1,130,000
Total	13,800,000	12,800,000	12,800,000

The supporting research and technology (SRT) program is aimed at assuring the efficient and effective support of future manned and unmanned space flight missions. The program provides the developments necessary for the orderly

augmentation of tracking and data acquisition support systems. In fiscal year 1969, emphasis will be placed on network performance and operations technology. Techniques such as station automation, spacecraft onboard data handling and control, and associated software will be examined with the objective of identifying methods to lower network operations costs and improve network effectiveness for support of future space flight missions. The program for SRT comprises effort in seven task areas as follows:

New systems

The primary effort in this category will continue to be focused on the data relay satellite system (DRSS). Systems definition studies will continue in fiscal year 1969, and an engineering test model of a phased-array antenna will be built and evaluated for applicability to the DRSS system. In the DRSS concept, a synchronous orbit spacecraft with steerable antenna beams is used to transfer data directly to and from low-orbit spacecraft and control centers—an operating technique which could eliminate the need for instrumented aircraft and appreciably reduce ground support costs.

Integrated systems analysis, development, and test

In this task area, software concepts and hardware models are proven in real or simulated operating environments before being implemented in the network stations and control centers. Studies and tests will continue on the use of digital techniques to determine the optimum level of automation for the station monitoring and control functions. Studies also will continue on techniques for integrating into the networks advanced hardware for data handling and control purposes. Work will continue on metric evaluation and calibration of the manned space flight network while Apollo operations are underway. Also, a similar "test-while-using" program is underway for the 210-foot-diameter antenna at Goldstone to determine operating techniques and the limits of performance capabilities.

Antenna subsystems

Effort in this category is aimed at three primary objectives: decreasing the time required to change the antenna mode from one mission to another, improving the reliability and reducing the maintenance of large antennas, and more effective utilization of existing support capability through automation and component improvements.

To provide rapid changeover of the antenna mode, concepts involving the use of multiple frequencies and a wideband feed system are being evaluated. To improve the support effectiveness of large steerable antennas, studies will continue on digital techniques to automatically program operations, and to monitor, test, and analyze overall performance.

Receiving and transmitting subsystems

Effort in fiscal year 1969 under this task area has several aims: assessment of techniques which aid in automating station operations, support of new modulation requirements, improvement of frequency control and stability at the stations, and evaluation of new transmitting and receiving technology.

The advanced receiver effort will evaluate control techniques for automatic reception of spacecraft tracking and telemetry signals.

Work will also continue on modulation and demodulation techniques and a low cost, highly stable atomic frequency standard for support of interplanetary missions.

Data handling and control subsystems

In fiscal year 1969, work in this category will consist of two primary SRT efforts: The satellite network station automation effort aimed at providing this network with a moderate reduction in the level of manual operations and the deep space network effort on data handling and control of future planetary missions.

Because the earth satellite data handling workload is still increasing, more effective handling techniques will continue to be developed and evaluated. Work on subsystems and software includes language, control and display techniques, equipment switching techniques, data analyses and displays programing, and data error detection and correction.

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Data processing and reduction

An increase in the activity in this area is planned for fiscal year 1969 due to the advanced developments needed in the deep space network to support future planetary missions. New Techniques are needed in the control center to accept, process, reduce, and display the increased data flow. Studies, modeling, and development of the advanced data processing system and the associated software will continue in fiscal year 1969.

New innovations for the satellite telemetry automatic reduction systems (STARS) data processing lines will be assessed. Techniques will be developed for fulfilling data processing and reduction requirements of missions using advanced coding schemes.

Spacecraft subsystems

The main objective of this task area is to continue effective support of the flight programs through development of common-usage spacecraft electronic subsystems which correspond with tracking and data acquisition ground systems. Effort will continue in fiscal year 1969 with the objective of decreasing weight and cost, and increasing the performance and reliability of onboard telecommunications subsystems.

For planetary spacecraft where extreme limitations are placed on weight and distance, special techniques will be developed to provide onboard data compression, and a low data rate telemetry link. Also, studies will continue on techniques for acquiring a signal for direct reception from a planetary capsule during its entry phase.

To improve spacecraft subsystems effectiveness and to provide flexibility in the design of earth satellite missions, several onboard components will be developed, such as a unified radiofrequency subsystem for S-band, and a spacecraft data system, including processor, logic system, and data storage modules.

Mr. EVINS. This program includes (*a*) tracking to determine the position and trajectory of vehicles in space, (*b*) acquistion of data from scientific experiments and on the engineering performance of spacecraft and launch vehicle systems, (*c*) transmission of commands from ground stations to spacecraft, (*d*) communication with astronauts and acquisition of medical data on their physical condition, (*e*) communication of information between various ground facilities and mission control centers, and (*f*) processing of data acquired from the space vehicles, and you are asking for $304,800,000. Operations is the largest item, $239,800,000.

What does this include?

OPERATIONS COSTS

Mr. TRUSZYNSKI. This includes the operations contractor costs.

Mr. WEBB. Almost all of these are operated by contractors, Mr. Chairman, and we are bringing onstream now the ships and airplanes——

Mr. EVINS. You had $195 million in 1967. It is $239 million in 1969.

Mr. WEBB. This is because the network is building up——

Mr. EVINS. More stations?

Mr. WEBB. And the addition of eight large airplanes and a number of ships to the network which we will use when we need them. We have first priority use. Then the Department of Defense will also use them while we are not using them.

TRACKING SHIPS

Mr. EVINS. The vessels at sea are controlled by the Navy, aren't they?

Mr. WEBB. We have paid for them, but they go into the pool of operating ships which they will operate for our use and their own.

Mr. EVINS. Are they NASA-owned?

Mr. WEBB. No, sir; they are nationally owned. They are part of a national system. We are paying for them, but they operate them.

Mr. TRUSZYNSKI. The title for the ship itself rests with the Department of Defense. The Air Force is the operating agency for these ships.

Mr. EVINS. One of my colleagues said for 30 years he rented a hotel. He didn't have title to it, but paid enough money to own it.

You don't have title to the ship, but you have paid for it, you said.

Mr. WEBB. Mr. Chairman, let me say in these joint operations, the Director of the Budget has frequently examined the total problem and allocated to each of us our proper part of the cost so we pay into the pool.

Mr. EVINS. The title rests with the Air Force?

Mr. WEBB. Yes, sir.

Mr. EVINS. They serve you when you call upon them?

Mr. WEBB. Yes, sir.

Mr. EVINS. Do they bill you then for services rendered at the time, in addition?

Mr. SHAPLEY. Yes, sir.

Mr. EVINS. The operations fund, part of it will be to pay for that?

Mr. WEBB. Yes, sir; and they also furnish us services with their own ships that we did not pay for and we reimburse them for that, so we have the benefit of all the ships in the pool when we need them.

Mr. EVINS. You pay for the use of your own ships. You pay for the use of their ships, and this operating money, we understand, part of it is for this?

Mr. WEBB. Yes, sir.

Mr. EVINS. And there are 26 stations?

Mr. WEBB. Yes, sir.

Mr. EVINS. Are they charging you more to operate your stations?

Mr. TRUSZYNSKI. The increase represents the first full year operational costs for the stations completed in the network this year.

EQUIPMENT COSTS

Mr. EVINS. Equipment goes from $62 million to $52 million. You need less equipment now.

Mr. TRUSZYNSKI. That is true because of the completion of stations with which equipment is associated.

Mr. EVINS. Supporting technology is the same. This is another item for operations; isn't it?

Mr. TRUSZYNSKI. This is largely for advanced development in tracking systems that we carry out at the field centers. It is not for operations.

Mr. EVINS. Most of the increase in 1969, the operations program, is related to the support requirements for the Apollo manned lunar landing program. Fiscal year 1969 operations budget also includes an increase in funds for the Air Force eastern test range.

Isn't most of the increase due to the higher share of the eastern test range?

Mr. WEBB. There is a substantial increase because they have allocated costs to us that were heretofore paid by the Air Force with services rendered free to NASA.

Mr. TRUSZYNSKI. It is about $6.4 million in this budget for that function.

TECHNOLOGY UTILIZATION PROGRAM

Mr. EVINS. Here is another important phase of your program, technology utilization. Tell us about this program.

BENEFITS TO NONSPACE INDUSTRY

Mr. WEBB. It is really an experimental effort to determine the best way that nonspace industry can benefit from the new NASA developments. We do not undertake to do this expressly to serve all of industry, although we do publish the results and make them available, but we have a few pilot model operations.

Mr. EVINS. Very well said. There is a great expenditure and a great development of useful information but I am not so sure it can always be understood and properly appreciated.

We asked you last year to give a statement on the things that have been accomplished. It is very technical data. I later saw a film which exhibited some of the benefits of the technology utilization program.

You are making this available to industry?

DISSEMINATION CENTERS

Mr. WEBB. And learning better ways to do it so that the entire Government can benefit from those pilot model efforts. Much of the Department of Commerce program in this field has benefited from the pilot model project we had at the University of Indiana, for instance. The one we have at the research triangle at the University of North Carolina, the one we have at Pittsburgh—all of these are on a different basis and each is contributing to a pool of knowledge. The provision is that we will pay half of the costs for 5 years and after that it must be self-sustaining. Half the cost must be borne by industry even during the first 5 years because we want them to really believe it is worthwhile and work at it before we invest Government money.

Mr. EVINS. Among the objectives is to increase the return on the Nation's investment. You are proposing to spend $4 million to make this technology available to industry and others. Part of it is in identification of the problem, evaluation, dissemination, and analysis.

Mr. WEBB. Yes, sir.

Mr. EVINS. We are appropriating $4.4 billion in the space program and $4 million to increase return on the investment.

With the research and development appropriation down, why should not this appropriation correspondingly be decreased?

LARGER FLOW OF INFORMATION GENERATED

Mr. WEBB. Because we are generating a much larger flow of information as the program matures, Mr. Chairman.

And, further, we are finding it necessary to produce in technical brief form, and in summaries of the state of the art, this information in more usable form.

Again this would not nearly pay for the full problem of developing utilization, but where we develop a summary of the state of the art and then furnish it, others begin to pick up and use this. We have done this in between 20 and 30 new and different fields already. What we are doing is plowing new ground here and expecting others to come along and clear out all of the remaining stones and stumps and make that fully productive.

The sheer volume, as we proceed up the road with a $30 billion effort, increases the need for this. We are cutting back on this program. It was $5 million.

TECHNOLOGY UTILIZATION

Mr. EVINS. Some of this research may have a spin-off which fully justifies the whole cost of the program. One item alone may justify the whole program in its contribution to the gross national product.

You say specialists in universities, research institutions, and private industry in selected areas of science are attempting to document these inventions, innovations, improvements, and discoveries, which are of potential value to the economy. I am sure you have them documented. I think it might be well to supply some additional information for the record here. This can be one of your best sales items.

Mr. WEBB. We will furnish an additional statement.

(The information requested is as follows:)

The National Aeronautics and Space Administration has undertaken a vigorous technology utilization program to encourage the use, in nonaerospace pursuits, of the new knowledge gained as a result of NASA activities.

This program was established in response to the requirements of the Space Act of 1958. The framers of the act foresaw that new knowledge would be a very important result of the Nation's research and development efforts in aeronautics and space. The Space Act requires the agency to (a) place requirements on NASA contractors to give a full technical report on "any invention, discovery, improvement, or innovation which may be made in the performance of any NASA work"; and (b) "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof."

The principal purposes of the NASA technology utilization program are: (1) To increase the return on the national investment in aerospace research and development by encouraging additional uses of the knowledge gained in those programs, (2) to shorten the time gap between the discovery of new knowledge and its effective use in the marketplace, (3) to aid the movement of new knowledge across industry, disciplinary, and regional boundaries, (4) to contribute to the knowledge of better means of transferring technology from its points of origin to its points of potential use.

The technology utilization program has been conducted in an experimental mode, permitting the lessons of experience to guide us in improving the approaches, methods, and techniques used to bring about the secondary application of knowledge.

The new knowledge gained in aerospace programs has proved to have substantial secondary utility—in nonaerospace industries, in biomedicine and health care, in education and in other sectors of the economy.

The effective transfer of technology cannot be accomplished as a small and separate function of an organization. It is essential to have a total commitment of the agency to the function. Those who conceive new ideas, those who conduct research, those who develop new hardware, those who monitor R. & D. contracts, those who manage projects and programs—all must assume a portion of the responsibility to achieve the important national objectives of technology transfer. At NASA, these responsibilities are recognized and important progress is being made.

During the past year continued rapid progress in technology utilization has been achieved. NASA contractors reported approximately 4,600 items of new technology during calendar year 1967, an increase of 10 percent from the previous year. In 1967, 975 items were published in "Tech Briefs" or compilations, compared with 714 the year before. We nearly doubled the number of "Technology Surveys" in print by publishing eight in 1967, and an additional 26 are in preparation. More importantly, the response to these publications has risen even more dramatically as illustrated by the following figures: We responded to 13,800 industrial inquiries for additional information compared to 8,000 in 1966; the Department of Commerce clearinghouse sold 270,000 "Tech Briefs" in 1967; and the clearinghouse sold nearly 90,000 copies of the other technology utilization publications.

The experimental regional dissemination centers have continued to make progress in serving industry in their regions. The biomedical application teams are proving that NASA technology can solve problems in the field of medicine. Our experimental program to disseminate computer programs developed for NASA to others who can use them has already returned a net saving to the economy of hundreds of thousands of dollars.

We believe that some of the greatest benefits will derive from the large masses of basic and applied data on properties of materials, fluids, electronics, flow phenomena, etc., for which direction application is not now apparent but which becomes a large part of the storehouse of knowledge available to draw on the future activities. A significant part of NASA's activity in the Office of Technology Utilization is aimed at documenting and storing these data so that they may be readily retrieved and made available to any source that may have a requirement or use for them.

INTERAGENCY COOPERATION

The Atomic Energy Commission has appointed technology utilization officers at several laboratories to identify, document, and report new technology developed at those laboratories, in the same manner as NASA installations perform this function. To avoid duplication of systems—and thus save costs—NASA handles the evaluation, publication, and dissemination of the resulting tech briefs.

We have undertaken five joint efforts with the Office of State Technical Services in the Commerce Department, and we continue to closely coordinate our efforts with that agency.

In addition to cosponsorship of conferences with the Small Business Administration, we have cooperated with that agency in several additional efforts, including a new pilot program of the SBA in which publications called Tech Aids are distributed by SBA to 20,000 small companies.

Several important transfers of technology to elements of the Social and Rehabilitation Service (HEW) have taken place in the last year under that continuing interagency program.

There is a growing industrial audience for the technology resulting from NASA programs. And this industrial audience is complemented by increasing numbers of users of aerospace technology in other areas, such as medicine and health care, education, other Federal agencies, and the professions

One additional indication of this increasing acceptance is the growth in the number of articles in business and technical publication reporting on advances made in NASA programs and announced via technology utilization activities. For example, we are aware of more than 1,200 articles in over 300 business and professional magazines during calendar 1967 reporting on such technological advances from NASA.

The following cases of NASA-generated technology which have already been transferred to other uses which are selected from dozens of similar cases, are representative of the value which can be derived from active technology utilization efforts.

Researchers at the University of Minnesota Medical School are seeking the cause of the tendency for the bones of our bodies to become brittle with age. Little data has been collected on the elasticity of bones in the living state. Needed is special instrumentation. Reporting this problem to a biomedical application team resulted in the identification of a miniature stress transducer developed at Jet Propulsion Laboratory to measure stresses in solid rockets. The medical investigators plan to use this transducer in their research.

Flintkote Co., N.Y., has been licensed to market the technology of thermoplastic materials developed at Jet Propulsion Laboratory and announced in tech brief 66–10453.

The University of Minnesota Medical School reports it will use a substantial amount of know-how developed and reported by NASA in the design and construction of its sterile operating and postoperative rooms.

Several critical helicopter design decisions were made by one regional dissemination center client on the basis of information obtained from the RDC.

An Ohio firm solved a problem in high-temperature electrical insulation on the basis of NASA technical information.

A New York company has tested and now plans a pilot production run of instruments for commercial sale based on an avian ballistocardiograph developed at Ames Research Center.

Western Electronic Products Corp., San Clemente, Calif., is now marketing two products based on NASA inventions, a coaxial cable cutter and stripper developed at Ames Research Center and an electronic component lead bender developed by Marshall Space Flight Center, both announced in tech briefs.

A NASA-developed complex wave generator has been incorporated into a manufacturer's commercial product line. The low-cost design was developed for specific acceleration qualification of components for the Centaur rocket.

A firm is using a modification of a NASA technique to polish metal masters for shaping elliptical glass mirrors to be used in bowling score projectors. Presently, 400,000 such mirrors are being produced.

A New England electronics firm is using NASA developed self-oscillating converter as the basis for a battery operated d.c. to a.c. inverter in an aviation runway system.

A small electronics firm, which makes extensive use of NASA information, cites two specific examples—NASA tech briefs 64–10069 and 64–10171. The one describes a bending brake that will be used in the company's production operation, and the other a biotelemetry unit that will become an addition to the firm's product ine.

Yearly savings of $15,000 have resulted for an electronics company which was disturbed by the high number of rejections of its assemblies due to joint failures. Through reference to a NASA publication, "Welding for Electronic Assemblies," company personnel were able to determine proper settings, isostrengths, electrode materials, repeatability, and distribution curves resulting in process control and proper inspection procedures.

A small Arkansas firm designs and develops electronic subsystems and circuits to meet the specialized requirements of its customers The company's project engineer says that the circuit technique in tech brief 63–10553 was employed, with minor alteration, in the development of a product for one of its customers.

A small manufacturer of solid-state industrial control equipment sought the assistance of a regional dissemination center in finding a means to simplify construction and reduce size of a power controller it was manufacturing. NASA information indicated that a specialized plastic coating approach was the answer to their problem. The RDC supplied additional data on the state-of-the-art of this technique leading the company to the development of a process for the application of a specially developed finish for metal parts which provides excellent electrical insulation and heat transfer. This finish has enabled the company to effect a 75-percent reduction in size of the power controller, while maintaining equivalent power capability.

Ample evidence exists to show that technology being developed in the course of NASA programs has relevance in many other pursuits and that this agency is making efforts to provide ready access to the technology generated in our programs.

In this way, we contribute to the country's rate of economic growth and to improving the quality of our lives.

Mr. EVINS. We have a lot of information here on special analysis. I believe most of this information is for the information of the committee and not for the record.

Mr. Administrator, in summary, you are asking for 305 new jobs in the program for next year and an appropriation of $4,370,400,000.

Mr. WEBB. Yes, sir.

TITAN MARS COSTS VS. VOYAGER COSTS

Mr. EVINS. Titan-Mars seems to be the only real new program in 1969. Tell us again what the overall cost of this program is, as compared with the Voyager program which was not approved last year.

Dr. NAUGLE. The cost of the Titan-Mars 1973 program is about $390 million, total cost.

Mr. EVINS. This is the total cost?

Dr. NAUGLE. Yes, including the launch vehicle.

The total cost of the Voyager program which we proposed last year was about $2.5 billion.

Mr. EVINS. You cut down from $2.5 billion dollars to the Titan-Mars at $390 million?

Dr. NAUGLE. That is right.

Mr. EVINS. You will derive new knowledge and new achievements, perhaps in line with your Voyager program.

Mr. WEBB. Mr. Chairman, we will be developing new ways to get from flybys in 1971 the same kind of information that could be obtained in larger amounts and more precisely perhaps from probes that would enter the atmosphere of another planet like Mars. So I would say the technique of using the flyby has been improved and will yield us greater information that we thought, let us say 2 years ago.

I think, second, the landers that we will be using in the Titan-Mars program will be very much smaller, will not give us the information that we had expected to get from the Voyager program.

Mr. EVINS. The Voyager program was postponed at the time because of budgetary stringencies. It was a new program beyond the moon. It was felt that such a program should be conducted on a less costly basis, but at the same time we should have our technicians studying, planning, and thinking with regard to the follow-on.

Mr. WEBB. We will get more immediate knowledge per dollar from the program, but we will not end up with a system that can be used for 10 or 15 years for planetary exploration. That is perhaps the best way I can say it.

Mr. EVINS. That is very good.

NASA ADMINISTRATIVE COSTS

Mr. JONAS. I know you have had some pay increases, but you have a $4,300 million program here and $650 million of it is for administration. That is about 15 percent. I don't know how to compare you with similar organizations, but your percentage of administration costs is going up. I made a quick calculation. When your program was $4.9 billion you were spending $640 million on administration, or about 13 percent. Now, it is difficult for me to understand how, when you reduce a program, you have increased administration.

Mr. WEBB. Can I call on Mr. Lilly to make a statement?

Mr. LILLY. Mr. Jonas, as I tried to point out the other day, our administrative appropriation actually has been coming down if you measure it, for example, in 1966 dollars. If we were still paying the same level of salaries in 1968–69 that we had in 1966, the program today would be under $600 million. It would be a figure of about $586 million.

The increases have all come in the pay increases that have been approved.

The increase, for instance, in fiscal year 1968 cost us $12.5 million for the pay raise which was voted. That same increment is going to cost us $18.6 million next year. Mr. Jonas, the budget before you does not include this automatic pay raise that is going to become effective on the first of July.

Mr. Jonas. Two percent of your program is $80 million instead of 12; 2 percent of the cost is $80 million. Your administrative cost is up 2 percent. I don't know that it has any relationship to $80 million.

Mr. Lilly. And using the ratio of administrative operation to the total program, yes, sir, it has. However, I don't think this a particularly good measure in using the dollars and the total procurement program. It takes as many men to manage a contract, for instance, that runs $3 billion as it does one that runs $2.5 billion. The fact is that the work that has been accomplished as we have moved along in the Apollo program, as we are moving out of the design and development and the phase of the work is concluded, some contractors are being laid off. The equipment and vehicles now come to us for check-out and launch. It does not reduce the requirements on our own people.

Mr. Jonas. You said something I have always agreed with, that it takes about the same number of people to run a $3.5 billion program as it would to run a $4 billion program because the program is there. Its magnitude is slightly reduced, but you have to have the same supervision.

When we put that argument to agencies on your side of the table—not yours, but others—every time they are assigned an additional mission, another workload, they want more people. So the reverse ought to work too. It doesn't take any more people to run a $4 billion program than $3.5 billion one.

Mr. Webb. There is another feature of this that I wish Mr. Shapley could cover for you.

SCIENTIST AND ENGINEER SALARIES INCLUDED

Mr. Shapley. I think it is correct that we have not, in recent years, requested additional people based on this type of justification you have mentioned.

The point I hope you would consider would be this: We have always been a little unhappy with the title of this appropriation, "Administrative operations," because that suggests all the people and the expenses in here are administrative in nature in the ordinary sense of the word. The fact is, as you know, that this appropriation pays all the salaries and other benefits of the scientists and engineers who work for the government in the program so that a very large proportion of the people that are paid for in this appropriation are people who are actually doing research and development and test work rather than purely administrative work.

Mr. Jonas. You are saying it really ought to be chargeable to R. & D.?

Mr. Shapley. Yes, sir. By the suggestion of this committee, I believe, several years back, it was decided it would be more convenient

to have all of NASA salaries in one appropriation. In effect, the appropriation that has this unfortunate name of "Administrative operations" covers the salaries of all the theoretical scientists, the experimental scientists, the people who are actually doing development work and research in all our laboratories. I think perhaps we could supply a breakdown that is better than the ones in the book here right now, to make that point clear.

Mr. EVINS. You could have the total administrative operations and another item saying "So much of this is for research and development."

Mr. SHAPLEY. Yes, sir.

Mr. EVINS. Is your JPL contract operations under administrative operations?

Mr. WEBB. No, sir.

Mr. EVINS. It is under research and development funds?

Mr. WEBB. Yes, sir.

Mr. SHAPLEY. It is shown as a memorandum item for your convenience in the book.

Mr. EVINS. This should be under research and development.

ADMINISTRATIVE OPERATIONS APPROPRIATION

Mr. JONAS. It might pay you to put a little extension on this in the record when it comes down.

(The information requested is as follows:)

The title of the appropriation, "Administrative operations," may convey the impression that it is an administrative or overhead account. It is, rather, the account which provides the in-house technical and management capabilities made up of manpower and facilities which provide the thrust to carry out the NASA missions. Program items and elements of cost which can be more effectively and economically managed as a whole, such as personnel, travel, general purpose ADP, range operations, utilities, and the collection and dissemination of scientific and technical information are included in the "Administrative operations" appropriation even though they directly support the research and development effort.

The "Administrative operations" appropriation is presented in six functional categories. These categories, with the fiscal year 1968 and 1969 estimates, are as follows:

[In millions of dollars]

	1968	1969
Personnel related costs	$436.1	$442.5
Travel	16.5	16.5
Automatic data processing	31.5	31.5
Facilities services	92.6	94.9
Technical services	18.8	18.8
Administrative support	44.9	44.0
Total	640.4	648.2

All the civil service personnel employed by NASA are included in the AO appropriation. Of the total, 70 percent are scientists and engineers, technicians and technically oriented wage board employees doing research and development and test work. The remaining 30 percent are related to R. & D. in a less direct manner, providing the professional administrative and the clerical support to the direct program. About $330 million of our personnel costs are for the direct program personnel.

As with personnel, NASA's other functional categories, with the single exception of administrative support, primarily cover costs directly required for the R. & D. programs. For example, the largest amount of travel is for conduct

of R. & D. and C. of F. programs, flight mission support, and overseas travel to launch and tracking sites. Only a small amount of travel is for administrative purposes.

The ADP program is for general-purpose computer capability which is not primarily associated with a specific program or project. However, this computer capability is utilized from 90 to 95 percent in support of the research and development effort.

The costs included in facilities services are largely required for direct support of the R. & D. program. The largest single subcategory, range operations at Cape Kennedy, accounts for 44 percent of the total cost of the category and represents the cost of launch services and operations for both manned and unmanned missions. In addition, the largest amount of the cost for utilities is for operation of wind tunnels, test chambers, simulators, and other laboratory equipment and facilities engaged in R. & D. projects. Significant amounts are required for maintenance and repair of equipment and specialized custodial and security services required because of the R. & D. program. The amount in facilities services applied to housekeeping and operation of administrative-type facilities is relatively minor.

In technical services, the largest cost is for preparation and dissemination of the scientific and technical reports concerned with R. & D. programs. It is only in the administrative support category, which represents approximately 7 percent of the total AO budget, that the majority of the costs are not directly in support of direct program activities and can be classified as administrative in nature. These costs include administrative communications, administrative printing, administrative supplies, materials and equipment, local transportation and transportation pool operations, medical services and such installation support services as mail, messenger service, supply, and related services.

Mr. SHAPLEY. The fact that this account stays relatively level although the number of people in total is coming down, or has come down in the past year, as you know, represents a decision that beyond a certain level it is in the interests of the Government to retain some of the Government's own scientists, engineers, and that type of technical capability. So to some extent we are taking a larger reduction on the contractor side than we are in-house.

Mr. JONAS. That is all right for a few key people, but we don't want to find out some of these days that instead of losing people by attrition you are putting them in administration to keep them on the rolls.

FLOW OF FLIGHT HARDWARE

Mr. WEBB. No, sir; we will not be doing that, Mr. Jonas.

There is one fact Mr. Lilly mentioned very briefly that I think is important; namely, that as the contractors built a vast amount of equipment, which in the case of these larger programs over the last several years would amount to, I would guess, something like several billion dollars' worth of equipment for test purposes, to prove what can be done and what cannot be done, and as we, during that same period, develop these simulators such as the large vacuum chamber at Houston, we now arrive at the point where we are taking the flight hardware that resulted from all of this effort and putting it in those simulator facilities like this thermal vacuum chamber. We are getting ready to make sure that these test vehicles, which will never fly, do, in fact, give us the precise information that permits the men to fly. So we do a lot of testing in these new centers where we have facilities.

At Huntsville, for instance, we went through this development of a very large dynamic testing tower for this very large Saturn in which we put in all of the dynamic and bending modes and all the shapes and so forth to make sure it would fly; and it did fly.

The end result of this massive contractor effort comes into our facilities, which are unique, and are not duplicated in industry, for the final test. So our costs tend to reflect that increased duty and responsibility at the end of the period of contractor work.

RELATION OF NOA TO EXPENDITURES

Mr. EVINS. Mr. Administrator, the record should contain an analysis of the relationship between the new obligational authority, carryover balances, and expenditures.

Mr. Shapley, will you please supply this?

Mr. SHAPLEY. Yes, sir.

(The information requested is as follows:)

RELATION OF OBLIGATIONS TO EXPENDITURES, FISCAL YEAR 1969

[In millions of dollars]

	Total	R. & D.	Construction of facilities	AO
Estimate of unobligated balance carried forward to fiscal year 1969	$38.7		$38.7	
NOA	4,370.4	$3,677.2	45.0	$648.2
Total available for obligation in fiscal year 1969	4,409.1	3,677.2	83.7	648.2
Planned for obligation in fiscal year 1969	4,370.4	3,677.2	45.0	[1] 648.2
Expenditures in fiscal year 1969	4,575.0	3,851.3	75.5	648.2
Out of current year NOA	(2,999.7)	(2,448.2)	(4.5)	(547.0)
Out of prior year NOA	(1,575.3)	(1,403.1)	(71.0)	(101.2)

[1] Excludes 2d increment of pay raise to be effective July 1, 1968. Funds not contained in agency budgets.

CARRYOVER BALANCES

Mr. EVINS. Would you also provide us with the total carryover, both obligated and unobligated, at the end of fiscal years 1967 and 1968?

Mr. SHAPLEY. Yes, sir.

(The information requested is as follows:)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

CARRYOVER BALANCES AT YEAREND BY APPROPRIATION EXCLUDES REIMBURSABLE ORDERS FROM OTHER AGENCIES

[In millions of dollars]

	Total	R. & D.	Construction of facilities	AO
Carryover balance, June 30, 1967	$2,037.3	$1,745.7	$240.3	$101.3
Obligated (unexpended)	1,819.8	1,573.5	145.0	101.3
Unobligated	[1] 267.5	[1] 172.2	95.3	
Estimated carryover balance, June 30, 1968	1,915.7	1,695.7	118.8	101.2
Obligated (unexpended)	1,877.0	1,695.7	80.1	101.2
Unobligated	38.7		38.7	

[1] Includes $60,000,000 of fiscal year 1967 funds withheld by the President to be applied to NASA's fiscal year 1968 program.

Mr. EVINS. Gentlemen, we hope these reviews are helpful. They are certainly intended to be constructive.

Mr. Administrator, you have a great team of scientists. You are dedicated Americans and we wish you good luck and success in your very important mission.

CONCLUDING REMARKS

Mr. WEBB. Mr. Chairman, we appreciate the courtesy of this committee. As you have said, we have people deeply dedicated to make good decisions in these matters. We have appreciated the full and frank discussions you have permitted us to have here, and the time your committee has been willing to invest in trying to form its own judgment as to whether our program should be supported.

We thank you very, very much.

Mr. JONAS. I would like to say that it is always an educational experience to have you people in here. I join the chairman in his compliments. You understand, the more we compliment you, the less money we give you.

Mr. WEBB. I was afraid of that.

Mr. Chairman, I would like to emphasize one point: If it is at all possible—now that we have brought into being a capital plant of about $4 billion, now that under advanced research and technology, Dr. Adams' area, which does not fly these scientific and planetary missions, we have a $1.2 billion capital plant and 12,500 civil servants and quite a number of very advanced companies working—that it would be well if you gentlemen could find some time to go out and look at what this Nation has here. You could see firsthand why it is that we and the Air Force could work together to overcome certain problems related to the control of the TFX airplane, or whether, when the airlines find clear air turbulence, we can use the information we obtained from the Gemini program to solve the problem of having commercial airliners desintegrate in the air. If you could go and see some of these installations and the men doing this work, I believe it would be of value to you.

Mr. EVINS. Thank you and good luck, gentlemen.

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