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RESEARCH PROGRAMS

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HEARINGS BEFORE THE COMMITTEE ON RULES HOUSE OF REPRESENTATIVES EIGHTY-EIGHTH CONGRESS

FIRST SESSION

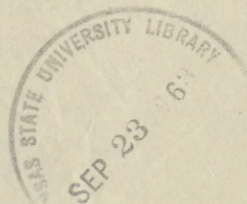
ON

H. Res. 455 and Companion Resolutions

A RESOLUTION TO CREATE A SELECT COMMITTEE TO INVESTIGATE EXPENDITURES FOR RESEARCH PROGRAMS CONDUCTED BY DEPARTMENTS AND AGENCIES OF THE FEDERAL GOVERNMENT

AUGUST 13 AND 15, 1963

Printed for the use of the Committee on Rules



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1963

22-694

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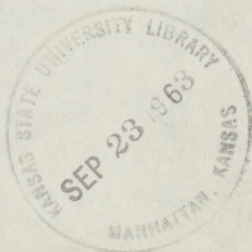
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CONTENTS

	Page
Statements of—	
Hon. Carl Elliott, a Member of Congress from the State of Alabama.	2
Hon. Olin Teague, Representative in Congress from the State of Texas.	13
Hon. Joseph E. Karth, Representative in Congress from the State of Minnesota.	16
Hon. Carl Vinson, Representative in Congress from the State of Georgia.	21
Hon. William L. Dawson, Representative in Congress from the State of Illinois.	27
Hon. George P. Miller, Representative in Congress from the State of California.	32
Hon. Chet Holifield, Representative in Congress from the State of California.	35
Statement submitted for the record:	
Hon. Stanley R. Tupper, Representative in Congress from the State of Maine.	38
Statements of—	
Hon. Oren Harris, a Member of Congress, from the State of Arkansas.	41
Hon. Wayne N. Aspinall, a Member of Congress, from the State of Colorado.	51
Hon. Melvin R. Laird, Representative in Congress from the State of Wisconsin.	54
Hon. Michael J. Kirwan, Representative in Congress from the State of Ohio.	57



RESEARCH PROGRAMS

TUESDAY, AUGUST 13, 1963

HOUSE OF REPRESENTATIVES,
COMMITTEE ON RULES,
Washington, D.C.

The committee met, pursuant to notice, at 10:30 a.m., in room H-313, the Capitol, the Honorable Howard W. Smith (chairman) presiding.

The CHAIRMAN. The committee will be in order.

We are here this morning to consider House Resolution 455 introduced by Mr. Elliott, a member of this committee, and numerous companion resolutions.

I think we will start off by hearing Mr. Elliott, the author of the resolution.

(H. Res. 455 follows:)

[H. Res. 455, 88th Cong., 1st sess.]

RESOLUTION

Resolved, That there is hereby created a select committee to be composed of five Members of the House of Representatives to be appointed by the Speaker, one of whom he shall designate as chairman. Any vacancy occurring in the membership of the committee shall be filled in the manner in which the original appointment was made.

The said committee is directed to make a complete, full, and thorough investigation of the numerous research programs being conducted by sundry departments and agencies of the Federal Government and, without limiting the generality of the foregoing, the committee shall give special attention to the following: (1) the overall total amount of annual expenditures on research programs; (2) what departments and agencies of the Government are conducting research, at what costs and with what results; (3) the amounts being expended by the various agencies and departments in grants for research to colleges, private industry, and every form of student scholarships; (4) what facilities, if any, exist for coordinating the various and sundry research programs, including grants to colleges and universities as well as scholarship grants.

The committee shall report its findings to the House with such recommended legislation as the committee may deem appropriate to correct any deficiencies. The committee shall make such reports to the House prior to September 1, 1964, and may submit such interim reports as it deems advisable. Any reports submitted when the House is not in session may be filed with the Clerk of the House.

For the purposes of this resolution the committee, or any subcommittee thereof, is authorized to sit and act during the present Congress at such times and places within the United States, whether or not the House has recessed or adjourned, to hold such hearings, to require the attendance of such witnesses and the production of such books, papers, and documents, and to take such testimony as the committee deems necessary. Subpenas may be issued under the signature of the chairman of the committee or any properly designated chairman of a subcommittee, or any member designated by him and may be served by any person designated by such chairman or member. The chairman of the committee or any member thereof may administer oaths to witnesses.

The majority of the members of the committee shall constitute a quorum for the transaction of business, except two or more shall constitute a quorum for the purpose of taking of evidence including sworn testimony.

STATEMENT OF HON. CARL ELLIOTT, A MEMBER OF CONGRESS
FROM THE STATE OF ALABAMA

Mr. ELLIOTT. Mr. Chairman, House Resolution 455 would create a select committee of the House of Representatives who would be charged with examining the scope and the effectiveness of federally sponsored research programs.

The resolution requires that the select committee submit a final report to the House by September 1, 1964, and directs—

* * * that the committee shall give special attention to the following items: First, the overall total amount of annual expenditures on research programs; second, what departments and agencies of the Government are conducting research, at what cost, and with what results; third, the amounts being expended by the various agencies and departments in grants for research to colleges, private industry, and every form of student scholarships; and fourth, what facilities, if any, exist for coordinating the various and sundry research programs, including grants to colleges and universities, as well as scholarship grants.

Mr. Chairman, in 1945, as a result of basic and theoretical scientific research, a great deal of which was conducted in the 1920's and 1930's, we exploded a bomb whose mushrooming cloud symbolized the beginning of an era in which the state of mankind's knowledge was to grow and expand at a rate which staggers the imagination even today, nearly 20 years later.

One way to measure this growth of knowledge is merely to note that the bomb we dropped on Hiroshima is but a peashooter in today's modern military arsenal. Another way to measure the growth in our knowledge is to look at what our Government has been spending on research over the years. In 1940, the Federal Government spent \$74 million on research and development programs. By 1953, we were spending about \$2 billion.

Over the past 10 years, we have increased our research and development costs at a rate of about a billion dollars each year, so that in fiscal year 1963 the administration budgeted \$12.2 billion. This is \$12.2 billion for research and development, a sum greater than is allocated to any department or agency of the Federal Government with the single exception of the Department of Defense. Budget estimates for this 1964 fiscal year increase this figure to approximately \$14.9 billion.

I recite these figures only to demonstrate the scope of the program with which the proposed committee would deal. They are not necessarily alarming figures. On the contrary it is, on the surface at least, reassuring that we, as a nation, are pursuing the search for knowledge in such a dedicated and determined fashion. The history of all mankind in each of its great civilizations proves that knowledge is power and when research lags knowledge stagnates and civilizations crumble.

However, Mr. Chairman, it is my strong conviction that it is not enough that we recognize the undisputed and the indisputable need for scientific research by appropriating many billions of dollars to support it. We in the House of Representatives have the constitutional duty to initiate all revenue-raising measures and by tradition we initiate appropriation legislation as well. It is my conviction that with this duty goes the obligation to ourselves and to the tax-paying public to oversee the administration of these great sums, to inform ourselves as to how they are being spent, and to assure ourselves that they are being spent wisely and in the public interest.

It will not be an easy task, Mr. Chairman, for such a committee to obtain the information that it will need, and that the House needs. This spending of 90 percent of our research and development dollars is spread over five agencies of Government: the Department of Defense, the National Aeronautics and Space Administration, the Department of Health, Education, and Welfare, the Atomic Energy Commission, and the National Science Foundation.

The spending of substantial research funds is further distributed among 8 other departments and 24 other independent agencies. A fact which further complicates the problem is that more than 75 percent of these research and development dollars are spent on projects conducted by private research organizations, institutions, and universities under Federal grants and contracts.

The fact that such a study is a difficult task undoubtedly explains in part why no Government-wide review has ever been attempted by this body and it explains why the last joint congressional committee established for such a similar purpose was the Allison commission which functioned in the years 1884 to 1886. Difficult though it may be, however, it is a job that must be done so that we may determine for ourselves and for the public whether we are getting a full return on our research investment.

Mr. Chairman, I would like to describe the scope which I envision for such a select investigating committee, some of the objectives or questions about our research programs which come to my mind, and some goals to which I believe this committee, if established, should address itself.

The first question we need to have answered is, Who is performing research for the Government? We already know, in general, that virtually every department and independent agency of the Government is involved. They are actually conducting and performing in the aggregate about 23 percent of the dollar value of our Government's research. This segment is known in the literature as intramural research. We know that at least one quasi-public body, the National Research Council of the National Academy of Sciences, is involved in this research.

We know, too, that the remaining three out of every four of our research dollars are being spent outside Government agencies for the so-called extramural research. Of this amount, according to the National Science Foundation, in 1962, approximately 80 percent of our extramural research and development grants and contracts were obligated to private, profitmaking organizations; 15 percent to colleges and universities, and the balance to other nonprofit research organizations.

From the gentlewoman from Oregon, Mrs. Green, who reported on the "Federal Government in Education," we learn that there are at least 100 institutions of higher learning which do at least \$1 million worth of Government research annually, and that these 100 colleges and universities receive 90 percent of the \$631 million in Federal research spent by educational institutions. We also learn on page 50 of that report that the first 10 institutions receive 38 percent of all of these funds and that the first 25 schools receive 59 percent.

Now, the answer to the first question, Who is performing research for the Government? Even to the extent we already know a part of it raises several other more searching and more important questions.

For instance: How is it determined when the Government will perform its own research? How is it determined when it will contract it out? How is it determined who will perform extramural research as between universities, private institutions and private industry? What are the differences between the use of grants, fellowships, scholarships, contracts, and "purchased service" procurements and how do these differences affect the conduct of research or affect the public interest?

Parallel to the question of "who" is the question of what kinds of research are we performing? Another way of phrasing this is, What is the scope of our research program? We know in a general way that research is being conducted in most phases of the physical, biological, and social sciences. We know that some of our projects in the field of research and development are not only global but also range from burrowing deep into the earth's crust and below the sea to exploring the expanding limits of outer space and the stars.

The 1963 budget provides us with some tables and its "Special Analysis G" which combine the "who" and the "what," to present a picture which raises certain further questions.

We find, for instance, that there are 11 departments and agencies performing research in the fields of health and medicine. We find 5 agencies of the Government performing space research (exclusive of aircraft technology); 7 agencies doing work on oceanography; 8 in water research and the performing of water surveys; 14 are studying meteorology; and there are other programs involving multiple-agency interests and research which includes such broad categories as defense, environmental health, natural resources, nuclear energy, and more specific categories and scientific fields impossible to classify or identify at this time. This is a gap in our information which the committee should carefully explore.

The picture I have just presented is one of an apparent overlapping both of subject matter and of Government agencies. In many cases, and perhaps in all of them, this overlap can be explained and justified; in some cases the overlap may be only apparent and not real. I would hope that a select committee such as the one we are discussing will scrutinize carefully the overlapping which exists and satisfy itself that that which is justifiable for any of a number of possible reasons is permitted to continue, but that wasteful and unnecessary overlapping may be stopped.

I would think that in any \$14 billion enterprise, wasteful overlapping and just plain needless duplication are bound to occur. I would mistrust any claim to the contrary because this is the nature of human endeavors. We will hear today many claims of purported waste and we will continue to hear such claims in the days ahead. I would expect the proposed committee to painstakingly investigate each and every charge and I would expect that a percentage of all charges will very likely prove to be correct.

On the other hand, I would hope that a careful investigation would bring to light such inadequacies and such deficiencies as may exist in our research programing. I would hope that the committee might point to areas in which insufficient research attention has been paid, and in this connection I would want to see an analysis shown of those areas of maximum and minimum research fund allocation and the reasons for preferring one area over another.

I would want to see also the ratio of funds allocated to basic research as against applied research. In the 83d Congress, I was privileged to serve as the ranking minority Member of a special subcommittee of the House Committee on Education and Labor to investigate Federal activity in the field of education. In our report we noted that only about 30 percent of the funds spent on research in the universities in fiscal year 1955 were devoted to basic research. One of our conclusions at that time was that—

the predominance given to applied research is a serious contradiction of the traditional emphasis heretofore placed on basic research by American institutions of higher learning.

I would assume, Mr. Chairman, that the apparent gains made by Soviet research and development stem from a greater concentration of effort on basic research and I would hope that the proposed select committee would concern itself with this question.

Mr. Chairman, these last questions really raise the final broad area to which the select committee should, in my opinion, investigate and that is the area of policy or management. How are these vast research networks supervised? How are they coordinated, both within each agency and among the agencies? How are projects and programs planned? Who selects them? What are the various criteria, and how are the priorities established?

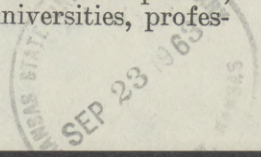
The same questions can be raised as well with regard to decisions made to select agencies, institutions, universities, private industry, and the formal relationships of grants versus contracts. For example, why is it that so much of the educational sector of the program is confined to a handful of famous universities? How is it that private industry and profitmaking institutions get the bulk of the Federal research dollar?

The most we can say at this time, I believe, is that we know where to start in answering some of these questions. Most, if not all, agencies have one or more offices charged with planning and coordinating their own programs. With respect to Government-wide interagency planning and coordinating, there are several offices which, on paper, would appear to fulfill this role or a large part of it and, within the White House establishment alone, there are several.

In the Office of Emergency Planning, there is the National Resource Evaluation Center of the Research and Development Office. There is also the Federal Council and the Office for Science and Technology, which is headed by the President's Science Adviser. There are interagency committees such as the one on oceanography and in addition the Smithsonian Institution has a Science Information Exchange and the National Science Foundation has a Science Information Service.

The question remains, Mr. Chairman, who coordinates the coordinators? Who supervises the supervisors, and how are these tasks accomplished all the way down the line so as to adjust the delicate balance between the recordkeeping burdens imposed upon our scientists and the Government's need to know, as between procurement type timesheets or punch clocks and the Government's proper functioning as the steward of our public funds?

One final objective, Mr. Chairman. I would hope that the committee would solicit information and opinions from all interested parties, from Government and private institutions and universities, profes-



sional organizations, and from the scientists and researchers themselves. I would hope that the committee would seek to learn both the criticisms and the recommendations concerning Federal policies and the administration of our various research programs.

So far, Mr. Chairman, I have been discussing tangible reasons for conducting such an investigation. That is, the direct benefits which the Congress and the public would reap in terms of a fiscally responsible and scientifically responsive research program. Let me now turn for a moment to some more intangible reasons and to some more indirect benefits which we can reap. By this, I mean the educational values such a study would yield both to the Government and the people.

Mr. Chairman, I spoke earlier of the Hiroshima bomb which symbolized the beginning of a mushrooming nuclear and space age in which technological and scientific research is the key to our future and to our security as a nation. Considering the widespread lack of public understanding or knowledge of our space program, it is no wonder that our morale as a nation dropped to an alltime low on the day the sputnik raced across the sky.

There was no secret about the sputnik. It was described in Russian popular science magazines and many people knew that it was coming. Many people in the United States knew. There was no secret except that it was kept from the American public until its success rocked our confidence from coast to coast. How could we sell democracy to the world on that month, October of 1957, when most of us knew practically nothing of our own accomplishments in the field of research and development?

In other words, Mr. Chairman, I feel that public hearings and an investigation such as that which is now proposed will have the additional benefit of helping us to educate ourselves, of informing the people about the kind and extent of research which we, as a government, are doing in their behalf. In addition, we will be, through such method, informing ourselves.

We live in an age of technology and scientific specialization and we have let this fact allow us to drift dangerously, I sometimes think, toward an attitude which says, "This is too technical a subject for me to understand so let the experts decide it." This is an attitude that we in the Congress sometimes share with the general public, I think; let the experts decide what kind of armed forces we need; let the experts decide how much fallout our grandchildren can withstand; let the experts decide how many times safety requires we be able to blow up the entire world; let the experts decide what kind and how much research we need.

When the late Clemenceau once said, "War is too important to be left to the generals," he was merely expounding a fundamental policy of democratic government. That is why our military has always been supervised by civilian leaders. The President and the Congress declare war and rely on the experts only for advice and execution.

There are two problems with leaving important decisions to experts. First, experts seldom agree with each other; and second, the public elects public officials to make decisions and not to rely altogether upon the so-called experts.

If we are to take back our responsibility for leadership in policy-making in these important fields, if we are to make public policy rather

than merely ratify the decisions the experts make, we must inform ourselves better. This investigating committee will not solve this problem but, of course, I think it would be of some help. Otherwise, I would not have introduced House Resolution 455.

In conclusion, Mr. Chairman, let me say that such an investigation into our research programs is long overdue. The program has developed into tremendous proportions almost before our very eyes. Everyone who has even thought about the question agrees the problems of managing such a program are enormous and, to a great extent, unsolved.

The fact that such a study is long overdue is illustrated by the tremendous and spontaneous interest which this resolution generated from the very day it was introduced. My office has received many dozens of inquiries from scientists, professional groups, industrial groups, as well as the press; and I am sure that others have had some similar experience.

Mr. Chairman, my record in the Congress certainly is such that it spells out the fact that I am not one who would want to damage or destroy or in any wise hamper the research and development programs of our Nation. I do think, however, that the time has come, considering their expense and the widespread nature of the activities connected with those programs, that the Congress ought to have an overall look along the lines I have described in my resolution.

Thank you very much.

The CHAIRMAN. Thank you, Mr. Elliott, for a very illuminating and very able statement.

Any questions of Mr. Elliott?

Mr. AVERY. I would like to concur with the chairman.

Our colleague on the committee presented a very able statement. It seems to me it was so persuasive, maybe, Mr. Chairman, there is no need to hold further hearings.

However, I do have one question and maybe this is not the proper forum to ask it in, but it seems to me—and this is not an original thought and it has been written about and spoken a good many times—the biggest problem the committee is going to have is that of available and capable professional staff because I would not envision the members of the committee being well advised in all of these technical aspects.

If the gentleman does not care to respond to this question, I withdraw it.

Had he thought through as to how this committee might be organized? Did he envision that it might draw upon some staff presently employed with other committees, or would it reach out to persons who are not associated with the Government at all so that there would be no prejudice on their part? Does he think they are available? What about the agencies? Would this committee as he envisions it, completely divorce itself from all of the agencies or would it be a coordinated type of study?

Mr. ELLIOTT. To answer the gentleman, I do not believe my thinking has gone as far into this phase of it as the gentleman outlines. However, it would be my idea that the staff and the committee itself ought to call upon knowledgeable people, both inside Government and outside, in the conduct of its investigation. I certainly feel that the

committee should use all the responsible tools that are available to do a first class investigation.

Of course, the committee will be limited somewhat. I limited it in my resolution to five members and I think that may have been a mistake. My feeling is that perhaps that number ought to be increased to seven or nine; that is, on the basis of the investigation I have done into the matter since I introduced the resolution.

I think the committee ought to be somewhat larger.

To further answer the gentleman's question, the staffing will depend a great deal upon the amount of money available for the investigation. If the committee is approved, and if the Committee on House Administration hears it, the size and quality of the staff will necessarily have to be limited to the tools the select committee may have to work with. I would hope that the committee might obtain sufficient funds, if it is created, to carry on its work in a very fine manner, gathering all available information, and judging that information in sensible proportions.

Mr. AVERY. Would not the gentleman agree that the authority that is conveyed to the committee, is this not actually the key to how effective this committee would be?

Mr. ELLIOTT. It is; very largely.

Mr. MADDEN. Mr. Chairman?

Have you summarized the number of various research committees, large and small, that would be subject to investigation by this committee?

Mr. ELLIOTT. No. I do not have in detail the answer to the gentleman's question. I do know that the field is large, the number is large.

Mr. MADDEN. There probably would be 100 to 150, would there not, of various research investigations under committees that are in operation right now?

Mr. ELLIOTT. I think, if the gentleman is speaking of it on a functional line of what is being done, there are many, perhaps more than 150.

Mr. MADDEN. In various departments?

Mr. ELLIOTT. Yes; under the aegis of various departments.

Mr. MADDEN. The purpose of this—

Mr. ELLIOTT. I am speaking of contracted research, the universities and private industry, and all that. There are many, many more than 150 projects underway.

Mr. MADDEN. Would it be the purpose of this committee to go to the various universities and various areas throughout the country to hold on-the-spot hearings, on-the-spot investigations?

Mr. ELLIOTT. I would think that possibly it might be necessary at some point to do that. I have no preconceived idea about the when and where, but in the course of the hearings, I think it might be necessary for the committee to specifically look into what is being done at a particular university or perhaps a group of universities, or a particular industry that is under contract with the Government to do research.

Mr. MADDEN. In order to determine the effectiveness of the committee—I mean to determine what is going on by these 150 or 200 research organizations functioning right now—it could not be accomplished by five members, could it?

Mr. ELLIOTT. I just said that after I looked into this matter, I came to the conclusion that the number ought to be increased.

Mr. MADDEN. About 77 would be better, I should think, because of the magnitude of the endeavor, the project.

Mr. ELLIOTT. Yes, sir.

Mr. MADDEN. My gracious, with 150 to 200 various research investigations or research committees that are functioning, 5, 7, or 17, could not even touch the surface. By that I mean, to determine what is going on in these various research committees.

Mr. ELLIOTT. It is a large undertaking, I agree with the gentleman.

Mr. MADDEN. Terrific undertaking.

Mr. ELLIOTT. Yes, sir.

Mr. MADDEN. Do you have any idea what the cost of carrying on an investigation of this kind with the office force required, investigators and paperwork, on functioning would amount to?

Mr. ELLIOTT. No; but I think it would be substantial.

Mr. MADDEN. It probably would require, if there were seven members on the committee, the full time of all members on the committee, would it not?

Mr. ELLIOTT. It would require a substantial amount of their time. I do not know whether full time or not.

Mr. MADDEN. Could you put an amendment on this resolution to say that the members of the Rules Committee are barred from serving?

Mr. ELLIOTT. That would be up to the members of the Rules Committee.

Mr. MADDEN. That is all.

The CHAIRMAN. Mr. Colmer?

Mr. COLMER. Mr. Elliott, I assume, among other objectives you have in mind here to coordinate is to try to save some money?

Mr. ELLIOTT. That is right.

Mr. COLMER. Out of the \$14 billion that goes into all of these various areas, I take it that it would be premature to assume any figure you might have in mind as to how much might be saved.

Mr. ELLIOTT. I do not have any figure in mind.

Mr. COLMER. I would not think that you could at this time, but I just wondered if the gentleman did not agree that the success of his committee study would depend largely upon the type and the quality and number of staff, following the line Mr. Madden was bringing out. Certainly Members of Congress would not have the time to devote to this that would be necessary to make investigations themselves.

Therefore, you would have to have considerable staff.

Does the gentleman have anything in mind about how much of a staff he would need?

Mr. ELLIOTT. I have not gone that deeply into it, I will say to my colleague.

Mr. COLMER. But the gentleman does agree that if the committee is going to be effective, if it is going to make any worthwhile disclosures or recommendations, that it is going to have to be adequately staffed?

Mr. ELLIOTT. Yes, sir; I agree with the gentleman.

Mr. COLMER. Both as to numbers and quality?

Mr. ELLIOTT. Yes, sir.

Mr. COLMER. Unfortunately, your committee will be a select committee, I believe, and that is what your resolution provides for; there-

fore, you will have no legislative jurisdiction? That is correct, is it not?

Mr. ELLIOTT. The resolution provides——

Mr. COLMER. You would not be able to report bills?

Mr. ELLIOTT. The committee shall report—and I am quoting——

* * * its findings to the House with such recommended legislation as the committee may deem appropriate to correct any deficiencies.

Mr. COLMER. That is what I assumed.

Mr. Elliott, I am all for this. Mr. Madden inquired about the number of people and so forth that would be required to do this job and if the job is done correctly, with the proper staff, I think the staff is more important than the membership because, with due deference to the Members who might serve on that committee, because of the minute details and the multitudinous disclosures that will have to be made, et cetera, that staff will be important.

That brings to my mind a resolution of my own that I have before this committee that has been here for some several years and is still here now that would do with a different approach for all of the matters and duplications and ramifications of that which you propose to do here for this one thing. That is the Joint Committee on the Budget resolution that the gentleman is familiar with.

As the gentleman knows, the Appropriations Committee would have an ample staff to go into all of the duplications, ramifications, waste, and so forth, of every department of Government.

It has been my thought for years, as it has been of those who have really studied this thing, including Senator McClellan who sponsored the resolution over in the Senate, that if we spent \$5 million, \$10 million, or \$25 million a year for staff to give the committee the tools with which to work, we would save money in the long run.

Since the gentleman has gotten into this field, I wonder if he has given any further thought to this resolution before our committee to do that?

Mr. ELLIOTT. Well, I had not specifically considered the gentleman's resolution in connection with my own, House Resolution 455, I will say to the gentleman.

Mr. COLMER. The gentleman recognizes the similarity in the approach to these problems, does he not?

Mr. ELLIOTT. Except the gentleman's resolution is much, much broader.

Mr. COLMER. Right. Therefore, it would be much more effective on a broader scale. Well, I shall not press the gentleman further on that phase of it. I just thought that this might be a very good opportunity to call to the attention of this committee that resolution.

It has been hanging around here so long, although it has passed the other body some four times.

Mr. MADDEN. Will the gentleman yield?

Mr. COLMER. I hope the gentleman will give the same sympathetic consideration to that resolution that I propose to give to this one.

Yes, I yield to my colleague.

Mr. MADDEN. If the gentleman's committee requires \$25 million for a staff, that might be a substitute for the distressed area bill.

Mr. COLMER. If the committee can find \$25 million worth of experts in distressed areas, I would be for it.

Mr. BROWN. They have to qualify.

I would like to ask one question, if I may.

Mr. ELLIOTT, you mentioned in your statement the report made by Mrs. Green, I believe, as chairman of the subcommittee?

Mr. ELLIOTT. Yes, sir.

Mr. BROWN. The Subcommittee on Education and Labor.

I received a copy of that report 3 or 4 weeks ago, and I took it home with me and read it for a day and a half or 2 days; and that report does contain a great deal of valuable information; yet, it does not cover the subject completely at that.

Mrs. Green, I believe, stated before this committee that there was still considerable research to do and she did go into research activities in certain fields, especially in those fields that come under the jurisdiction of her committee, or of the Committee on Education and Labor.

Is it your thought that, if this committee were set up that your resolution provides for, this committee would get the benefit of what studies had been made by the various committees in the Congress and try to coordinate and put together the information that had been obtained from different sources, so as to cover the entire field as much as possible in the way of research activities?

In other words, the benefits you could obtain from these partial studies at least that have been made and the reports that have been made, and you would have the benefit of that?

Mr. ELLIOTT. Yes, sir. I would think that such a committee as I have proposed could profit greatly from the piecemeal efforts that have been made all across the subject by other committees.

Mr. BROWN. I am sure your thought would be, in substance, that this committee would be a coordinating committee and would put together the efforts of all of the various investigating committees, take the benefits that could be obtained from the studies made by various subcommittees, various full committees, and so forth, and bring this in where it could be brought together in one big composite picture; is that your idea?

Mr. ELLIOTT. Yes; I think this is the justification for the committee I have proposed.

Mr. BROWN. This is so big it does cover the jurisdiction of a great many legislative committees?

Mr. ELLIOTT. Yes, sir.

Mr. BROWN. In other words, no one legislative committee could possibly go into all of the research activities of the Federal Government as now constituted, but it would have to be a committee having jurisdiction across the whole field?

Mr. ELLIOTT. That was my feeling when I introduced the resolution.

Mr. BROWN. Is that the purpose and the reason for the resolution? Is that it?

Mr. ELLIOTT. Yes, sir.

Mr. BROWN. That is all, Mr. Chairman.

The CHAIRMAN. Mr. Elliott, as you know, I introduced a companion resolution.

Mr. ELLIOTT. Yes.

The CHAIRMAN. I am always disturbed by very large appropriations which seem to grow and grow and grow every year, but early in my study of this thing, I ran across two reports of two of the agencies.

This book contains principally a list of all of the grants to colleges and students for scholarships to study specific things. I was disturbed by some of the things we seem to be spending a lot of money on and investigating.

I will only take the time to give you just a few.

For instance, here is one to study shellfish in the vicinity of Venezuela and that costs the modest sum of \$1,300. I suppose that was for a fishing trip.

Here is one on the revision of hermit crabs of the Pacific American coast and that was a little more expensive, \$19,000.

Here is a \$16,000 item given to a university to study the revision of the classification of earthworms.

We have one next to that for \$5,000 for a couple of years study to a university on the evolution of box turtles.

I do not know what box turtles are but maybe they are a special variety that needs investigation.

Then here is another one for \$18,000 to another university for carpenter bees of the world. This must require very deep study.

There are so many of them.

Mr. BROWN. Have you found one on the love life of the Central American toad?

The CHAIRMAN. I guess it is in here.

My estimate is that somewhere between four and five of these are on each page and I have counted the number of pages, so I do not think anything has been skipped.

Here is a gentleman who gets \$47,500 to study protein structures as evidence of phylogenetic relationships with birds.

Here is one for \$40,000 to study the systematics of heliconian butterflies.

It seems to me that many of these things we could do without.

Here is a study on psychology and that costs \$43,000.

This is on individual behavior and group processes.

Here is an interesting one for \$64,000 to study resistance to persuasion.

Some of us thought Adam and Eve had settled that question with the apple, but it seems like we have to go over the same ground again at a cost of \$64,000.

There are any number of these things in here and I wonder about these. For instance, here is one for \$31,000 to study the biology of bumblebees.

I am wondering if we can do without the study of the biology of bumblebees, in view of the state of the budget.

Here is another one on the distribution of Bare Lake fish. I have gotten several of them here in only a short time and I do not want to take too much of the committee's time, but they illustrate some of the things we are spending portions of this \$14 billion on to study.

I hope your committee, if it is authorized and I hope it will be, will go into those kinds of things.

Here is one that is a volume of grants and awards of another agency of the Government and all of that volume of several hundred pages is a listing of grants. Some of them do not say what they are, but I think that is all I have to say on this.

I had a number of those illustrations but I do not want to take up the time of the committee.

I think what I have read will give an illustration of some of the things I have been thinking about.

Mr. MADDEN. Does all of that come under the Armed Services Committee?

The CHAIRMAN. No; that does not happen to come under armed services.

Mr. MADDEN. What committee of the House would that come under?

The CHAIRMAN. Those particular ones?

Mr. MADDEN. Yes.

The CHAIRMAN. I do not know.

If you want to investigate bumblebees, you might get on that committee.

Thank you, Mr. Elliott.

Mr. O'NEILL. Is there anything in your legislation that would say that the committee would have the right to determine what experimentation should be made by the committee?

Mr. ELLIOTT. No; there is nothing in the legislation to do with that.

Mr. O'NEILL. May I ask you one other question: Is this not already the prerogative of the gentleman from Chicago's committee, the Government Operations Committee?

Mr. ELLIOTT. I am not sure I have specific knowledge of just what is the prerogative of each committee.

I had the feeling though, at the time during the days we have discussed this matter here in the Rules Committee, that an overall investigation needed to be made and not one confined to a specific portion of it as might fit the legislative jurisdiction of a particular committee.

Mr. O'NEILL. Is anybody doing any type of job like this at the present time to your knowledge?

Mr. ELLIOTT. I am not familiar with just what the committees are doing but I have secondhand information that some of them are looking into phases of this problem.

Mr. O'NEILL. I want to say you made an excellent presentation.

Mr. ELLIOTT. Thank you.

The CHAIRMAN. We have two other witnesses who have introduced resolutions. We will hear now from Mr. Teague.

STATEMENT OF HON. OLIN E. TEAGUE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. TEAGUE. Mr. Chairman, I know of no one that disagrees with the need for an overall evaluation of our research in this country. I do think there is some disagreement as to how it should be done. It seems to me we have three choices, one of which is through a select committee, and I have introduced a resolution creating a select committee because I was not sure it would be done another way.

After introducing this resolution, I had considerable conversation with the chairman of the Science and Astronautics Committee, Mr. Miller. Whether he has set up his subcommittee to do this thing, I do not know. Mr. Brown asked if other committees of Congress have authority to do this. I think the Government Operations Committee

has the authority to do it, and I think the Science and Astronautics Committee has the authority to do it.

When the gentleman from Massachusetts, Mr. O'Neill, on May 29, 1958, reported the bill to the House setting up the Science and Astronautics Committee, he said:

This resolution gives to the new committee primary jurisdiction over outer space, including exploration and control thereof and also astronautic research and development including resources, personnel, equipment, and facilities. It also gives this committee across-the-board jurisdiction over basic scientific research and science scholarships and over legislation relating to scientific agencies which include (1) the Bureau of Standards, standardization of weights and measures, and the metric system; (2) the National Advisory Committee for Aeronautics; and (3) the National Science Foundation.

The National Science Foundation has as one of its objectives to bring about the effective coordination of the various scientific information activities within the Federal Government.

Mr. Chairman, it seems to me—and I think this is most important—that what we are considering today can be done in one of three ways: The Government Operations Committee can do it; the Science and Astronautics Committee can do it; or it can be done by a select committee. There may be advantages in its being done by a select committee outside of the Science and Astronautics Committee that works with it continually; and, again, there might be duplication of effort if the Science and Astronautics Committee would do exactly what the select committee would do.

Last year the Space Committee, being new, spent about 6 months on the authorization bill, and 90 percent of the money going to the space agency is for research. This year we cut \$500 million off of their request, which indicates we took a careful look at it.

The Space Committee has made great efforts at forcing the Defense Department and the space agency to coordinate, for instance, their medical installations. Mr. Daddario has visited practically every medical installation in the country and has made a tremendous effort to make them use the school at San Antonio and at Pensacola, Fla., and that sort of thing.

So I think the Space Committee does have authority to do this, and if I understand Mr. Miller correctly, he does intend to appoint a subcommittee to go into this, whether or not you have a select committee, to do the oversight job.

But certainly I believe that our country needs to have a close look taken at it so far as the overall research program is concerned. But if you do it with a select committee, it may be premature. I think Mr. Vinson has set up a research subcommittee of his Armed Services Committee, and I think they should have a year or two to work through that subcommittee and if they do not do the job, then set up a select committee, but it should be done one way or another.

The CHAIRMAN. You said your committee had reduced the space agency \$500 million?

Mr. TEAGUE. Approximately \$500 million.

The CHAIRMAN. As a matter of fact, was it not increased very considerably, something over \$5 billion, this year?

Mr. TEAGUE. You are talking about the request that came up from the executive branch of Government, but our committee cut the request something a little less than \$500 million.

The CHAIRMAN. The budget request?

Mr. TEAGUE. Yes.

The CHAIRMAN. But still you came out with something over \$5 billion?

Mr. TEAGUE. Yes, and they probably will ask for more than that next year.

The CHAIRMAN. That is what is worrying us.

Well, you have changed your mind since you introduced the resolution?

Mr. TEAGUE. No, Mr. Chairman. If the Science and Astronautics Committee is not going to do it or the Government Operations Committee is not going to do it, I think a special select committee should be set up.

The CHAIRMAN. You realize this is divided into numerous agencies and departments of the Government, some of which come under the jurisdiction of almost every committee of the House?

Mr. TEAGUE. That is true, but as I understand, the Science and Astronautics Committee has an across-the-board responsibility or jurisdiction over scientific research in the country. It does not have primary jurisdiction over defense research, but it has an oversight jurisdiction.

The CHAIRMAN. Does your committee have jurisdiction over the National Science Foundation?

Mr. TEAGUE. Yes.

The CHAIRMAN. How closely do you police what goes on there?

Mr. TEAGUE. In my opinion it has not been policed carefully. I know the chairman of the committee has talked with Mr. Ken Hechler about going into this. This has been going on for a number of months.

The CHAIRMAN. You will remember, Mr. Teague, that when the National Science Foundation was set up it was set up as an agency to do what we call basic research. That is the underlying beginning of research that would not be done by private industry or otherwise. Many of us voted for it because we realized there was a gap which was the basis of all science that required filling.

It happens that these particular items I referred to a few minutes ago were grants and scholarships by the National Science Foundation which you say come under the jurisdiction of your committee. This book has been available for some time, and I just wonder if it ever came to your notice that the biology of bumblebees, for example, was a basic science?

Mr. TEAGUE. Mr. Chairman, I can give you some good examples. For instance, \$150,000 for a scientist to study insects at the South Pole, which I do not agree with. I think the National Science Foundation needs a thorough going over. There are about nine specific activities of the National Science Foundation and basic scientific research is one, and the awarding of scholarships is another. They have nine different activities. I am sure Mr. Hechler and the chairman of the Science and Astronautics Committee will tell you they recognize the need for looking into the National Science Foundation.

The CHAIRMAN. This has been going on for many years and nobody has done anything about it yet.

Mr. TEAGUE. I agree with you.

The CHAIRMAN. Any questions?

Mr. BOLLING. As I understand, you feel this has to be done and has not been done but can be done in a variety of ways. How, for example, would you coordinate the activities of the newly established subcommittee of the Armed Services Committee on research with that to be established subcommittee of the Science and Astronautics Committee?

Mr. TEAGUE. I think this should be done and I think it is a gigantic job. I think it is bigger than Mr. Elliott realizes because we have worked on it for several months every day and have taken thousands of pages of testimony. I know Mr. Miller has talked to Mel Price about coordinating the work of the subcommittee of the Armed Services Committee and the subcommittee of the Science and Astronautics Committee. I would rather one of them tell you what has been done.

Mr. BOLLING. This, I take it, was quite recently?

Mr. TEAGUE. Quite recently.

The CHAIRMAN. I am wondering how recently?

Mr. TEAGUE. The subcommittee of the Armed Services Committee was just created. This discussion of the National Science Foundation has been going on since I have been on the Space Committee, which is 2 years.

The CHAIRMAN. Thank you.

Mr. TEAGUE. Thank you.

The CHAIRMAN. Mr. Karth.

STATEMENT OF HON. JOSEPH E. KARTH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. KARTH. Mr. Chairman, my interest parallels the interest of the gentleman from Texas, Mr. Teague, who has just testified.

The reason I introduced House Resolution 461, which is a companion to the resolution introduced by Mr. Elliott, is to indicate support of the idea that greater knowledge of the kind and extent of the research that is going on in this country should be had by the Congress of the United States and, of course, by the American people too.

First of all, let me say, however, that I am a very great and I say sincere and conscientious supporter of research. I happen to be mindful of the fact that every great and startling advancement we have made in this country has been the result of our scientific and technological research and, I do not care if it is radio or television or automobile, these advancements have given us the highest standard of living known to mankind. This high standard of living has been the result of research, both basic and applied. So I am one who supports the idea we have to continue to do tremendous amounts of research.

I am mindful too, Mr. Chairman, of the fact that by the year 2000 they say the population of this country will be in the neighborhood of 400 million people to 186 million we have today, and because of that I think we all agree great things need to be done, and I would venture to guess that some of these great things that need to be done to supply jobs and income for those increased hundreds of millions of people will be done as a result of our scientific investigation in space and other areas that are at this time not too well known.

But just because research has given us the standard of living we have today does not mean that all research is good just because it is

research or in the name of research. And so I would join Mr. Teague in saying that while we have excessive redundancy and excessive duplication and in many cases unnecessary research such as the chairman referred to, that this is going beyond the bounds of reasonableness, and this kind of research, as the chairman says, is for the birds and bees and butterflies. It really is not necessary in some instances and I think gives a black mark to research in general, a much blacker mark than it deserves. Again, not because I want to be redundant, but I think research has given us the greatest standard of living known to mankind and I think nothing else can take credit for it.

My greatest concern in this matter of redundancy or unnecessary research is in the field of so-called in-house capability. That is the research done in the Government by the Government for the Government. I think it is only normal that research of this kind is desired by the various agencies. I use the word "bureaucracy." Others have pet words of their own. But I think this is an area we have to be concerned about not because some of the research is unnecessary but because I think it is done at a very leisurely pace and leads to some of the grants the chairman and Mr. Teague referred to. It becomes a project and normally when this kind of project is done on an in-house basis; that is, an in-Government basis, I think in too many instances the results of the research, even when it is good and even when it contributes greatly to the advancement of technology in this country, too many times it does not get in the economic stream as it does when done by universities or private industry, and certainly it does not get in the economic stream as quickly as it does when it is done by our institutions of higher learning and by private industry.

Mr. BROWN. Will the gentleman yield for a moment?

Mr. KARTH. Yes, sir.

Mr. BROWN. I think you brought up an important point. I am receiving a lot of complaints from industry that Government contractors and the Government itself is raiding the field of scientists and technical experts and taking them away from private or business or industrial research to the detriment of the ability of private industry to compete with foreign industry. Is that the point you are making?

Mr. KARTH. I would say to the gentleman that is part of it, yes. I do think to a certain degree Government competes with private industry in the pirating of personnel, if I may use that word, in the scientific and technological field. But I think this is really probably at a minimum because, No. 1, those people who are capable of doing the breakthrough work in basic and advanced research and who are therefore the creative minds, are certainly in the minority, probably 1 or 2 or 3 percent at most in the various disciplines. To be a doctorate graduate usually takes 32 or 33 years of your lifetime and, generally speaking, when these people have their doctorate degrees they want to work for those who pay the most because they have a lot of catching up to do. Generally speaking, it is not the Government who pays the highest wages for these people.

Mr. BROWN. How about Government contractors?

Mr. KARTH. That is where these people generally go. It is Government contractors who really compete for this talent, but this is private industry as opposed to the Government itself competing for these people.

I would say, too, Mr. Chairman, that in spite of this fact I know some very top and able people, who now work for the Government as scientists or engineers, such as Dr. Seamans, Dr. Dryden, Dr. Cortwright, Dr. Newell, and others, really talented people; but generally speaking those people who make the breakthroughs are the 1 or 2 or 3 percent and, generally speaking, too, the Government cannot get these kinds of people—I say “generally” because we do have exceptions—but generally we cannot hire these kinds of people to work for the Government because of the low salaries, and so a good many of in-house Government research, in my humble opinion, goes for naught or goes to waste, how much on a percentage basis I could not say.

I do know the other body has made some investigation of this entire scientific research problem; and back in 1961, a special subcommittee of the Senate reported that of the \$2 billion spent on electronic research the preceding year, about \$200 million, in their opinion, had been wasteful and duplicative-type electronic research. Mr. Chairman, I do not know if this is true. All I say is that this is the result of that subcommittee's investigations and this was the conclusion to which they came.

So I would say, Mr. Chairman, that it certainly needs to be done. I join Mr. Teague, however, in saying there are some committees of the Congress who probably would be in a better position to do it and might be able to do it more rapidly and more accurately and more efficiently. I think the Science and Astronautics Committee certainly could investigate all the research going on in the field of space at a rapid pace and with great accuracy and efficiency because we are somewhat skilled now in the needs of the space program and, as Mr. Teague said, we have involved ourselves for 6 months in thoroughly investigating it because most of the work of the space agency is research and development work.

I would say to the distinguished chairman that while most of it is research, more of it is development, because you do not build a Gemini or a booster for a space capsule for a small amount of money, and once you have done the research, the development costs are greater than the research. But it is pretty much in the same house and I would hope as this committee continues its deliberations it would give careful consideration to the possibility of those committees now set up on a permanent basis and who have indicated that they would like to move further and complete the exhaustive study of this matter, be permitted to do so for a year or two and then if the job is not done, possibly a select committee should be set up.

This is all I have, Mr. Chairman.

Mr. CHAIRMAN. Any questions?

Mr. BOLLING. Mr. Karth, I used to serve on the Committee on Banking and Currency, and I found inevitably I came to have a close relationship with the people in the agencies supervised by the Committee on Banking and Currency. There was this relationship where we were pretty much of one mind after 3 or 4 or 5 years. I think this happens often on other committees.

Would you think there was any validity to the notion that the best way to have an objective and full investigation is with people who had not established long relationships with various departments?

Mr. KARTH. I recognize that the gentleman has a very persuasive argument. I cannot disagree with him that the standing committees having jurisdiction over various agencies of Government have on probably too many occasions agreed with or gone down the line with those agencies of Government. But I think now that this has been called to the attention of the Congress and the American people—and I want to congratulate Mr. Elliott for having done this—I think with this being called to their attention very effectively and very directly, a greater effort can be made so that the gentleman's fears of the past need not be fears of the future.

The CHAIRMAN. Any further questions?

Mr. AVERY. If I could paraphrase what you are saying, Mr. Karth, in your opinion if this select committee were authorized it would become a horrible example of duplication, the very thing it was set up to eliminate? Is that what you said?

Mr. KARTH. I did not mean to say that, really. I do think, however, in answer to the gentleman's question, that, yes, sir, it could duplicate a good deal of effort now going on by the various committees of the Congress who have this responsibility. I do not say this kind of duplication would not be good, it might well be, but I think the job can be done by well-established committees, and primarily I have in mind a subcommittee of the Science and Astronautics Committee and a subcommittee of the Armed Services Committee which have a better understanding of the problems and complexities of these agencies and therefore could probably do a better job of investigation than a select committee.

Mr. AVERY. It seems to me—and I mentioned this to Mr. Elliott, I do not know if you were in the room at the time—it seems to me it would be extremely difficult for any single standing legislative committee to completely divorce itself from a general familiarity and obviously prejudiced point of view. I do not mean to be critical.

Mr. KARTH. I would say to the gentleman it has not been difficult for me to try by every means available to make sure agencies justify their requests for funds.

Mr. AVERY. You serve on a committee that has a legislative history of, how many years, 5?

Mr. KARTH. Yes.

Mr. AVERY. Which is different from one that has a history of 50-some odd years.

Mr. KARTH. I would say I think the Science and Astronautics Committee has been very mindful of the fact that vast in-house capability leads to bureaucracy after a length of time. That is why in our subcommittee we reduced the budget request in the area of construction and facilities by more than 35 percent, which is a sizable reduction. We were somewhat fearful that a good deal of the requests that were made were not really necessary and could be done by other agencies of the Government or could better be done by private industry where private industry had the capability.

Mr. AVERY. Those are not the funds the Senate restored day before yesterday?

Mr. KARTH. I would say they restored a good part of it.

Mr. MADDEN. How many subcommittees are there in your committee?

Mr. KARTH. Three.

Mr. O'NEILL. Do you authorize for the National Science Foundation?

Mr. KARTH. No. They go directly to the Appropriations Committee.

The CHAIRMAN. I did not get that question.

Mr. O'NEILL. I asked who authorized for the National Science Foundation.

Mr. KARTH. Our committee has legislative oversight.

Mr. O'NEILL. What I was curious about was whom the National Science Foundation comes to to justify the biology of the bumblebee study and that sort of thing?

Mr. KARTH. I think they go directly before the Appropriations Committee. I would hope sometime they would have to go before a legislative committee for authorization, but now they go directly before the Appropriations Committee.

The CHAIRMAN. Mr. Karth, it is unusual for people to introduce resolutions they are not for, and I notice you introduced the identical resolution Mr. Elliott introduced a few days ago. I wondered what persuasion had been used on you to change your mind?

Mr. KARTH. Mr. Chairman, I can honestly say to you that no one has made an effort to persuade me to change my mind, and I might say I have not changed my mind. I said I introduced a similar resolution because I support the idea that the Congress and the American people should have greater knowledge of the kind of research being conducted in this country, and if in the wisdom of this Congress, standing committees cannot do the job, I support this resolution in its entirety because I feel that the job must be done one way or another.

The CHAIRMAN. If this resolution is reported by this committee, I just want to know if you are for it or against it?

Mr. KARTH. If it is passed by this committee after hearing all the evidence I will support the resolution.

The CHAIRMAN. Any further questions?

Mr. SISK. I would like to ask this: The gentleman will agree with me this job has not been done heretofore?

Mr. KARTH. Yes, sir.

Mr. SISK. Of course if no other good comes out of this than the fact that maybe some of these committees will activate subcommittees to do the job, perhaps it will have served the purpose.

I happened to serve on a subcommittee some years ago that had overlapping duties and we were delving into a job no other committee knew anything about. This year, in recreating this subcommittee, we find the legislative committees are very interested in doing a job, and I hope they will do it, but the gentleman will agree with me the job we are discussing this morning has not been done in the past and we would hope it would be done in the future either through activation of existing committees or the creation of a select committee.

Mr. KARTH. I would agree it has not been done, but I would say as to the Science and Astronautics Committee that the almost solid 6 months we took in hearing NASA's reasons for their budget request did in effect to a large degree do exactly what this resolution would do, and, further than that, that the chairman has given the full com-

mittee membership every indication of wanting to go into this thing on a 365-day-a-year basis, the National Science Foundation, NASA, and the Bureau of Standards.

So frankly I do not think the committee the distinguished gentleman from California, Mr. Miller, heads can be placed in the category of not having done the job. I say it has not been done as thoroughly as it should be, but I think it can be done and would be done.

Mr. SISK. I am not criticizing the committee of which the gentleman from Minnesota is a member and the gentleman from California is chairman, but I still think there is a coordinating job that needs to be done and I question that any legislative committee can do it. I may be wrong. I am inclined to favor the pending resolution.

Mr. BROWN. If this resolution of Mr. Elliott's should be adopted and this special committee created, your subcommittee and you yourself, I presume, would undoubtedly cooperate in every possible way with this special committee in furnishing any information that might be available to you to the special committee, so as to make the work of the special committee easier and less costly. Would that be your position?

Mr. KARTH. Insofar as I am concerned, the answer is "Yes."

Mr. BROWN. And do you feel that would be the position of your committee and your subcommittee?

Mr. KARTH. I feel it would be the position of my subcommittee.

The CHAIRMAN. Mr. Vinson.

STATEMENT OF HON. CARL VINSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. VINSON. Thank you, Mr. Chairman.

Mr. Chairman, I appear here this morning pursuant to the letter I received from you last week.

You advised me that there were a number of resolutions pending before the Rules Committee which would authorize the appointment of a select committee to study various aspects of the research and development programs conducted by governmental agencies, with emphasis upon areas involving unwarranted waste or duplication.

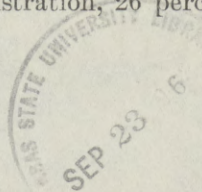
You enclosed a copy of House Resolution 455, which I presume is similar to the other pending resolutions, so my comments will be directed to that resolution.

Because of the major importance of this subject, I appreciate the high compliment that you have paid the committee by inviting me to participate in the discussion on the pending resolutions.

At the present time, the total annual Federal expenditure on research and development programs is approximately \$14 billion, and that is the approximate figure submitted in the President's budget message for fiscal 1964.

Now what agencies receive these funds and what percentage of the total does each have? The breakdown is as follows:

- (a) Department of Defense, 55 percent.
- (b) National Aeronautics and Space Administration, 26 percent.
- (c) Atomic Energy Commission, 9 percent.
- (d) All other agencies, 10 percent.



Thus, we find that Defense, Space, and Atomic Energy consume 90 percent of the R. & D. appropriations.

The remaining 10 percent is allocated among 19 agencies and departments:

	<i>In millions</i>
Department of Health, Education, and Welfare.....	\$720.1
Department of Agriculture.....	179.6
National Science Foundation.....	116.0
Department of the Interior.....	112.1
Department of Commerce.....	63.2
Federal Aviation Agency.....	55.6
Veterans' Administration.....	27.8
Executive Office of the President.....	11.9
U.S. Arms Control and Disarmament Agency.....	10.0
Post Office Department.....	8.6
Department of Labor.....	8.3
Smithsonian Institution.....	5.6
Tennessee Valley Authority.....	4.3
Housing and Home Finance Agency.....	2.0
Treasury Department.....	1.8
Small Business Administration.....	.6
U.S. Information Agency.....	.5
Federal Communications Commission.....	.4
Federal Trade Commission.....	.2
Total of these agencies.....	1,328.8

As you know, this is not the first time I have discussed research and development before the House Rules Committee.

You will recall that since the 86th Congress, the Armed Services Committee has reported an authorization bill for the procurement of missiles, ships, and aircraft.

During our detailed consideration of that legislation, it became obvious that a large amount of R. & D. money was involved.

But we were not required by law to authorize, in annual authorization bills, this expenditure for research and development.

However, when we found that more than \$3 billion in R. & D. money relating to missiles, ships, and aircraft was involved, we concluded that it was time to require an annual authorization for these research and development programs.

When we observe the fact that the Department of Defense budget for research, development, test, and engineering has increased from about \$500 million in 1948 to over \$7 billion in 1964, the importance of what we are trying to do in the Armed Services Committee becomes apparent.

We all know that the Department of Defense conducts its research and development programs through private industry, its own laboratories, nonprofit corporations, hospitals, and educational institutions.

We can better understand the scope of this endeavor when we realize that in 1963, approximately 250 colleges, universities, and hospitals received military prime contracts for R. & D. work. The amount of the contracts ranged from small grants of several thousand dollars to large contracts such as those received by the Massachusetts Institute of Technology, which totaled almost \$75 million.

Mr. Chairman, I have a complete breakdown by States of Department of Defense contracts for research, development, test, and evaluation awarded to educational and nonprofit institutions during fiscal 1962 throughout the United States. I will read the amounts by States.

Alabama, \$922,000; Alaska, \$1.5 million; Arizona, \$577,000; California, \$128,504,000; Colorado \$5.7 million; Connecticut \$848,000; Delaware, \$286,000; Florida, \$1.9 million; Georgia, \$1.3 million; Hawaii \$168,000; Illinois, \$30,379,160; Indiana \$3.3 million; and so on.

Mr. AVERY. Go ahead. What is the next one?

Mr. VINSON. Iowa \$522,000.

Kansas, \$233,196. There are three institutions in Kansas, the Kansas State University of Agriculture, the University of Kansas, and the University of Wichita.

Mr. AVERY. A great waste of available resources, I would say.

Mrs. St. GEORGE. Mr. Chairman, could I have the figures for New York?

Mr. VINSON. I will come to that.

Kentucky, \$120,000; Louisiana, \$370,000; Maine, \$248,000; Massachusetts, \$117,762,000.

Mr. BROWN. How much?

Mr. VINSON. \$117,762,000.

Michigan, \$10,910,000; Minnesota, \$2 million; Mississippi, \$462,000.

Missouri, \$1,773,344. There are five institutions in Missouri.

Montana, \$56,000; Nebraska, \$45,000; New Hampshire, \$436,000; New Jersey, \$4,111,000; New Mexico, \$3,548,000; New York, \$38,258,993; North Carolina, \$3,601,000; Ohio, \$11 million.

Mr. BROWN. How much was that again?

Mr. VINSON. \$11 million.

Mr. BROWN. Ohio and New York are both much smaller States than Massachusetts.

Mr. O'NEILL. The Athens of education.

Mr. VINSON. Oklahoma, \$960,000; Oregon, \$534,000; Pennsylvania, \$17 million; Puerto Rico, \$354,000; Rhode Island, \$2,612,000; South Carolina, \$51,000; South Dakota, \$64,000; Tennessee, \$552,000; Texas, \$9 million; Utah, \$1,419,000; Vermont, \$81,000; Virginia, \$2,216,000; Washington, \$3 million; West Virginia, \$54,000; Wisconsin, \$1,290,000; Washington, D.C., \$17 million; Maryland, \$53 million.

That is a total of \$481,823,390.

Now, Mr. Chairman, I file in the record the Department of Defense contracts for research, development, test, and evaluation awarded to educational and nonprofit institutions during fiscal year 1962 by States.

The total to colleges, universities, and hospitals was \$306,967,418; the total to nonprofit organizations was \$174,855,972—making a grand total of \$481,823,390.

(The following tabulation was submitted for the record:)

Department of Defense contracts for research, development, test, and evaluation awarded to educational and nonprofit institutions during fiscal year 1962

[Totals by States]

State	Colleges, Universities, and hospitals	Nonprofit organizations	Totals
Alabama.....	341,307	580,717	922,024
Alaska.....	1,545,724		1,545,724
Arizona.....	481,927	95,154	577,081
Arkansas.....			
California.....	24,635,423	103,868,677	128,504,100
Colorado.....	5,769,604		5,769,604
Connecticut.....	848,469		848,469
Delaware.....	286,094		286,094
Florida.....	1,715,787	211,668	1,927,455
Georgia.....	1,391,606		1,391,606
Hawaii.....	168,786		168,786
Idaho.....			
Illinois.....	19,446,017	10,933,143	30,379,160
Indiana.....	3,316,548		3,316,548
Iowa.....	522,990		522,990
Kansas.....	233,196		233,196
Kentucky.....	120,175		120,175
Louisiana.....	370,739		370,739
Maine.....	248,469		248,469
Maryland.....	47,277,408	6,038,000	53,315,408
Massachusetts.....	83,274,164	34,487,928	117,762,092
Michigan.....	10,910,774		10,910,774
Minnesota.....	2,166,490		2,166,490
Mississippi.....	437,867	25,000	462,867
Missouri.....	694,015	1,079,329	1,773,344
Montana.....	56,433		56,433
Nebraska.....	45,269		45,269
New Hampshire.....	436,727		436,727
New Jersey.....	4,014,397	97,350	4,111,747
New Mexico.....	3,548,549		3,548,549
New York.....	27,940,918	10,318,075	38,258,993
North Carolina.....	3,530,215	70,791	3,601,006
North Dakota.....			
Ohio.....	11,009,063		11,009,063
Oklahoma.....	960,773		960,773
Oregon.....	534,115		534,115
Pennsylvania.....	17,302,121		17,302,121
Puerto Rico.....	354,563		354,563
Rhode Island.....	2,612,341		2,612,341
South Carolina.....	51,342		51,342
South Dakota.....	64,735		64,735
Tennessee.....	552,117		552,117
Texas.....	6,559,177	2,552,546	9,111,723
Utah.....	1,419,325		1,419,325
Vermont.....	81,652		81,652
Virginia.....	1,256,197	960,000	2,216,197
Washington.....	3,009,211		3,009,211
West Virginia.....	54,846		54,846
Wisconsin.....	1,229,113	61,702	1,290,815
Wyoming.....			
Washington, D.C.....	14,140,640	3,475,892	17,616,532
Total.....	306,967,418	174,855,972	481,823,390

Mr. VINSON. Some 46 States, the District of Columbia, and Puerto Rico participated in these military research programs.

On March 8 of this year, I appeared before this committee in support of a rule on H.R. 2440, to authorize appropriations not only for the procurement of missiles, ships, and aircraft, but the research and development associated therewith.

The R. & D. phase, involving about \$3 billion, was discussed at some length.

At that time, I pointed out to your committee that when the military construction authorization bill was presented for a rule, I intended to ask authority which would require the annual authorization

of all research and development funds, or approximately \$4 billion more than the \$3 billion involved in H.R. 2400.

On June 4, 1963, I appeared before this committee in behalf of a rule for H.R. 6500, the military construction authorization bill. At that time, I advised your committee that in section 610 of the bill, there was a provision requiring an annual authorization of all research, development, test, and engineering funds in the Department of Defense, and that the total amount of money involved was slightly more than \$7 billion.

As you know, that bill passed the House on June 5 and I have no doubt that it will pass the Senate with this provision intact, because I am fully aware of the attitude of the Senate Armed Services Committee with respect to it.

I fully anticipate that next year the Committee on Armed Services will be required to report an authorization bill for this large annual expenditure for R. & D. in the Defense Establishment. In view of that conviction, on February 19 of this year, I announced to the House Armed Services Committee my intention to create a permanent subcommittee whose primary concern would be research and development in the Defense Department. I designated Mr. Price as chairman, Mr. Stratton, Mr. Cohelan, and Mr. Pike for the majority; and, after consultation with Mr. Arends, I designated Mr. Becker, Mr. Hall, and Mr. Stafford for the minority.

As you know, the Armed Services Committee has been very busy this session. We have already reported 22 bills, many of which were major bills that required long and detailed hearings before the full committee and subcommittees.

But we have been determined to begin the discharge of our R. & D. responsibilities at the earliest possible date. We also recognized that we needed another professional staff member who would devote his full time to this subject.

As a consequence, and by direction of the committee, I appeared before the House Administration Committee in support of House Resolution 393, which would give us another staff member. That resolution passed the House on the 18th of June. Thereafter, we canvassed the field of candidates and, on August 1, selected an outstanding person for the job.

On August 7, the subcommittee met for the first time with its new staff member. They discussed and adopted an agenda of activity. They are scheduled to hold the first of a long series of hearings on August 19.

From the foregoing, these facts are clear:

1. Fifty-five percent of the annual budget for R. & D. goes to the Department of Defense.
2. The House Armed Services Committee is already required to authorize approximately half of the annual appropriation for research and development, and will be required to authorize all of it as soon as H.R. 6500 passes the Senate.
3. The House Armed Services Committee is not only aware of its responsibility, it has already taken action to discharge that responsibility by the appointment of a permanent subcommittee, which has already organized, is staffed, has adopted a program agenda, and has scheduled hearings.

No doubt you wish to know my attitude with reference to House Resolution 455 and the other similar resolutions which are pending. Obviously, I can express no judgment with reference to the attitude of the Committee on Science and Astronautics, the Joint Committee on Atomic Energy, or those other committees of the House having jurisdiction over the programs of the other 19 agencies and departments which I have enumerated. So far as the House Armed Services Committee is concerned, we are fully aware of both our jurisdiction and our responsibility, and we fully intend to discharge both.

I am pleased to note that the seeds I have sown previously before this committee on the importance of R. & D., and getting better control of it, did not fall among the thorns and thistles.

You have shown an interest comparable to our own.

But I would hope that no other group in the House would duplicate the effort which we have already started and intend to fulfill.

It is also important to note that there are presently three committees of the House already involved in military research and development.

The Committee on Government Operations has its jurisdiction under the rules of the House. The Appropriations Committee must review the R. & D. programs during its annual consideration of the defense appropriation bill. The Armed Services Committee is now required, by law, to authorize approximately half of the military appropriations requests for research and development. We will be required to authorize all of it, on an annual basis, as soon as the Senate acts on the pending military construction authorization bill.

So, we must point out that whatever action you take on the pending resolutions, the Armed Services Committee has a statutory responsibility to continue the action which I have already outlined. If there is any substantial desire on the part of the House that the committee should cease these efforts, appropriate legislation should be passed to repeal the statutory authority and obligations now vested in the committee.

Almost every day that the House is in session we hear criticism of duplication and waste in the executive branch. So, I must suggest that we should be most careful to avoid those actions in the Congress which we so severely criticize outside the Congress.

There is one point in the resolution which I feel you may wish to further explore. That concerns the question as to whether or not there is duplication and consequent waste between those agencies of the Government that are engaging in substantial research and development activities.

On that point, I would like to point out that in 1958 the Armed Services Committee became concerned about the duplication between the military services in research and development, as well as the coordination of R. & D. between the Defense Establishment and other agencies of the Government.

As a consequence, there was included in the 1958 amendments to the National Security Act, a provision creating the Office of Director of Research and Engineering. This new position was considered to be of such importance that the person who holds that office is the third ranking civilian appointee in the Department of Defense. He is outranked only by the Secretary and the Deputy Secretary of Defense.

It is his responsibility to supervise all research and engineering activities in the Department of Defense and he directs those activities that require centralized management.

The Advanced Research Projects Agency, which deals with those research problems assigned by the President, has contractual authority and is directly under the Director.

The current holder of the office is Dr. Harold Brown, a young but outstanding scientist. In addition to his coordination responsibilities in the Defense Department, he pursues a program of collaboration and coordination with other Government agencies such as NASA, the Office of Science and Technology in the Executive Office of the White House, the National Science Foundation, the National Academy of Sciences, and the Atomic Energy Commission.

So, it is clear that in the Defense Department, there is an official who has responsibility for coordination with the other agencies I have mentioned in order to avoid duplication and waste. But I would leave it to your judgment as to how much further you would care to explore that point.

In conclusion, I want to assure you that I am not here to criticize the interest of the Rules Committee in the overall importance of Federal research and development activities, or your desire to eliminate, to the maximum possible extent, unwarranted duplication and waste in those programs.

On the contrary, I welcome your interest and appreciate the opportunity to tell you what the House Armed Services Committee is already doing to discharge its statutory responsibility in this area.

In the further consideration of the pending resolutions, there is one point we must all clearly understand. Regardless of the action that may be taken on any of these resolutions, the House Armed Services Committee has a continuing statutory responsibility over research and development in the Department of Defense and the House must approve an authorization bill authorizing appropriations for research and development before the Appropriations Committee can appropriate for this purpose. At present, the authority covers approximately half of the R. & D. effort in defense and, as I have previously stated, I fully anticipate that we will have statutory authority covering the entire defense research and development programs.

Thank you, Mr. Chairman.

The CHAIRMAN. We are pleased to know that you approve of the action of this committee.

Mr. VINSON. You heard my statement.

The CHAIRMAN. Mr. Dawson.

STATEMENT OF HON. WILLIAM L. DAWSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. DAWSON. Mr. Chairman and members of the Rules Committee:

It is always an honor and privilege to appear before this distinguished group. Your meeting today, as I understand it, is to consider House Resolution 455 and identical or similar resolutions, which propose that a select committee of five members be created in the House of Representatives to study Government research programs. The select committee would report by September of next year. The

concern of this committee about the large and growing expenditures for Federal research programs is understandable and is shared by most Members of the Congress.

In 1940, Federal funds for research and development and related physical facilities amounted to a mere \$74 million. The estimated expenditures for fiscal year 1963 are \$12.3 billion. Obligated funds, estimated at \$14.4 billion in 1963, are somewhat higher than expenditures. These outlays for research have grown year by year, reflecting in earlier years the enormous demands of World War II, including the atomic bomb project; later the renewed demands of the Korean conflict; and more recently the huge missile and space requirements of the cold war period.

At present four agencies account for 95 percent of the Federal research expenditures. They are the Department of Defense, National Aeronautics and Space Administration, Atomic Energy Commission, and Department of Health, Education, and Welfare. Of the \$14.4 billion in estimated obligated funds for fiscal year 1963, \$7.5 billion, or more than half, are direct defense obligations. The civilian space mission accounts for another \$3.9 billion, atomic energy for \$1.5 billion, and health, education, and welfare about \$800 million. The 1964 figures are even higher.

The next four agencies, Department of Agriculture, National Science Foundation, Department of the Interior, and the Federal Aviation Agency, obligated about 4 percent of the Government's research and development budget during 1961-63. Nineteen other agencies reported the remaining 1 percent of funds for research and development. Thus, while numerous agencies are involved, the bulk of the expenditures is concentrated in relatively few.

The Committee on Government Operations, which has a broad mandate to examine economy and efficiency in the Federal Government at all levels, continuously reviews Government research and development activities, whether conducted directly by the agencies, by contract to industry or nonprofit organizations, or by university grants. The Subcommittee on Intergovernmental Relations, chaired by Mr. Fountain of North Carolina, pays particular attention to the large civilian agencies in this respect, and recently has reported on the National Institutes of Health, which account for a sizable portion of research expenditures. The Subcommittee on Military Operations, under the chairmanship of Mr. Holifield of California, has been making an intensive study of the problems of managing large defense research and development programs. These studies cover the four agencies cited above which spend 95 percent of the Federal research and development funds.

Last year the Foreign Operations and Monetary Affairs Subcommittee under Mr. Hardy also reported on some aspects of the research sponsored by the Agency for International Development.

I understand that Mr. Fountain has written to you describing the work of our Committee in the area of health research and training. In the 87th Congress, we held several days of hearings and issued two reports on this subject, which have lead the National Institutes of Health to revise a number of its formerly loose administrative practices. Mr. Fountain's letter goes into more detail on this, and I shall not repeat it here.

Partly as a result of our earlier investigations in the management of ballistic missile programs, the President created in July 1961 an Interdepartmental Committee headed by David E. Bell, the Director of the Bureau of the Budget, to examine the Government contracting operations for research and development. The Interdepartmental Committee submitted a report entitled, "Report to the President on Government Contracting for Research and Development." It is usually referred to as the Bell report.

Mr. Holifield's Military Operations Subcommittee held 27 days of hearings last year and 6 days of hearings this year on the findings and recommendations of the Bell report and related problems of managing research and development. These hearings are in six volumes which total about 2,400 pages. This inquiry is an updating, in a sense, of earlier studies by this Committee, which, in the field of research and development, go back at least to 1953-54 when the Military Operations Subcommittee under the chairmanship of Mr. Riehlman of New York launched a wide-ranging inquiry. The Committee's 1954 report is entitled, "Organization and Administration of the Military Research and Development Programs" (H. Rept. No. 2618, 83d Cong., 2d sess.). I may note that the Riehlman report, even though 10 years old, still is in demand today. Mr. Riehlman is, of course, the senior minority member and participates actively in the work of the Military Operations Subcommittee.

I want to say here that our committee as a whole, both sides, the minority and the majority, works closely together in seeking to do a job thoroughly and to give the people of this country the benefit of the work that we are doing.

In 1958, we issued a report entitled "Research and Development (Office of the Secretary of Defense)" (H. Rept. No. 2552, 85th Cong., 2d sess.). This report was prepared by the Executive and Legislative Reorganization Subcommittee under my chairmanship. This, too, is a basic document and is relevant to present-day issues.

In 1959, our committee issued a report entitled "Organization and Management of Missile Programs" (H. Rept. No. 1121, 86th Cong., 1st sess.). This was prepared by Mr. Holifield's Military Operations Subcommittee. It analyzed the programs for missile and space development, the agency organizations involved, and the important problems to be resolved. I will say that this report has gained nationwide recognition for its excellence and thoroughness; it is used as a basic text throughout the Defense Department, and has been cited in numerous studies of weapon systems development and management.

In 1961, a followup report, also prepared by Mr. Holifield's Military Operations Subcommittee, was entitled "Air Force Ballistic Missile Management (Formation of Aerospace Corporation)" (H. Rept. No. 324, 87th Cong., 1st sess.). This report identified some key problems in management of large missile programs and led to a reorganization in the Air Force missile and space divisions. This report is recognized as a pioneering work in the analysis of contracting methods for research and development, with particular emphasis on the role and function of the nonprofit corporation for technical management of important Government programs.

The vast amount of material which the Military Operations Subcommittee has gathered in its 27 days of hearings in 1962 and 6 days

of hearings in 1963 on systems development and management will be the basis for a series of reports which we plan to issue toward the latter part of this session and early in the next session. Among the subject matters on which we will report are new techniques and procedures for procurement of large defense systems, role of nonprofit contract agencies, regulations to avoid personnel and organizational conflicts of interest in the research and development field, and military communications satellite programs as a case study of the problems in managing large systems which depend on advanced technologies and involve several Government agencies.

We plan to examine systematically, also, the Department of Defense-NASA relationships in performance of Government space missions. The problem of space missions, as you know, is one of particularly great interest to the Members of Congress. We just approved an authorization bill of more than \$5 billion in the House for NASA, and there is considerable concern about the value of the moon landing project, about possible duplication with military developments and possible neglect of military space defense systems, and other problems. This is a complex and difficult area which must be carefully explored. We feel that the Committee on Government Operations, which has across-the-board jurisdiction investigating governmental expenditures in relation to economy and efficiency, is particularly well fitted to do this job.

This is not to pass any adverse reflection on the work of the other committees of Congress in the fields of research and development as related to agency programs and missions. The defense budget for research and development will get an authorization review by an armed services subcommittee, under the chairmanship of my Illinois colleague, Mr. Price. This authorization review is required by Public Law 87-436 enacted 2 years ago. The House Committee on Science and Astronautics, which has scientific research and development within its jurisdictional purview, also conducts lengthy authorization hearings each year on NASA programs. This year, for example, the House committee hearings on the 1964 NASA authorization bill total 6 volumes, aggregating 3,540 pages. The Joint Committee on Atomic Energy, which this year extended its authorization role to include review of line items as well as facilities construction, gives a very careful scrutiny to the atomic energy programs.

After the subject-matter committees are done with their lengthy authorization hearings and reports, of course the Appropriations Committees take a second look, and there is separate action in each House. So that, all in all, we have a great deal of congressional surveillance and investigation of research and development programs.

I should point out that research is a short word for a very lengthy process or cycle. The universities are mainly, though not exclusively, concerned with basic research. Industry is more interested in applied research. Government-sponsored research falls into many categories. There are feasibility studies, program definition studies, initial development, advanced research, advanced development, engineering prototypes, test and evaluation, and production. The Government agencies make awards of contracts and grants in many scientific fields to many thousands of recipients in industry, the universities, and elsewhere. They also do in-house research in scores of laboratories and research centers.

I note that your resolution calls for particular attention to four matters:

- (1) Total annual expenditures on research;
- (2) What Government agencies are doing the work, at what cost, and with what results;
- (3) Amounts spent in grants to colleges, industry, and through scholarships; and
- (4) Facilities for coordinating these various research programs and scholarship grants.

Some of this information, which we might call inventory information, is available in volumes of statistics and compilations. Every agency which conducts important research programs, either on a recurrent or special basis, prepares catalogs and summaries of its work projects. The amounts of money expended, the agencies expending them, the sources to which the money goes, are ready at hand.

Appraising the results is a different matter, of course. It is very difficult to make appraisals of expenditures in the billions of dollars, with the research grants and contracts numbering in the hundreds of thousands. The subject matters are incredibly complex, and the best that a committee can hope to do is to spur better management methods and tighter control of programs by continuing surveillance and intensive study in selected areas. That, in essence, is what the Committee on Government Operations seeks to do.

However, the field is vast, the interest of the Members of Congress is broad, and we would not want to be in a position of discouraging any effort on the part of another group. Indeed, let me say that this committee is anxious to offer its cooperation, to make available its hearings and reports, to help identify areas of investigation, and to stand ready to consult or advise another committee, if it should be created. Our committee will, of course, continue to carry out investigations and studies required by its assigned jurisdiction. And I might suggest that if a temporary select committee is created, at the end of its labors next year we would be happy to receive and assimilate its material in furtherance of our own continuing work.

Thank you very much.

The CHAIRMAN. Thank you, Mr. Dawson.

Any questions?

Mr. AVERY. I have a question, Mr. Chairman.

The CHAIRMAN. All right.

Mr. AVERY. Mr. Dawson, I was quite impressed with your statement. I did not realize the Government Operations Committee had been so concerned about all of these technical reviews you have recited in your statement.

Mr. DAWSON. We have been.

Mr. AVERY. How many employees are on the staff of the Government Operations Committee?

Mr. DAWSON. In the neighborhood of 60.

Mr. AVERY. How many of those 60 do you consider to be qualified technical people? Let us separate them. I presume in the Billie Sol Estes investigation you would have had lawyers, but let us set them to one side. How many staff members in this very technical field where you would have reviewed, for instance, the organization and the management of missile programs? How many technical people do you estimate you would have had?

Mr. DAWSON. Mr. Holifield is chairman of that subcommittee. We give him whatever he feels is necessary to make his investigation.

Mr. AVERY. How about how many did he have?

I see he is holding up five fingers.

Mr. HOLIFIELD. About five professional people.

Mr. AVERY. Are they continuing employees on the Government Operations Committee? Are they available for all of these, what I consider, highly technical explorations?

Mr. HOLIFIELD. That is right.

Mr. AVERY. I must say I was quite surprised at this statement, Mr. Dawson, where you say that the report on the organization and management of the missile program has become a textbook throughout the Department of Defense. I was kind of surprised that the Department of Defense would come back up to the Government Operations Committee to lift a report to use as a textbook.

Does that mean as a guide, or what does it mean?

Mr. HOLIFIELD. May I answer that?

Mr. AVERY. With the permission of the Chair.

The CHAIRMAN. All right.

Mr. HOLIFIELD. I think what the chairman meant by that was that this report has been circulated throughout all the responsible areas in the missile management field, which is a tremendous field, and the Defense Department has put quite a number of our recommendations into effect.

They have reorganized along the line of some of our recommendations and have reported this back to us.

Mr. AVERY. It seems to me that this reflects, Mr. Chairman, a tremendous need for some kind of a review of this if the Defense Department was not aware of the voids and the overlapping features that apparently are brought out in this report, and have to rely on the Government Operations Committee.

It seems to me it is high time either the Government Operations Committee accelerate or intensify its efforts or else, Mr. Chairman, some positive action might be taken on the resolution submitted by the Chair.

The CHAIRMAN. Thank you, Mr. Dawson.

Mr. Miller?

STATEMENT OF HON. GEORGE P. MILLER, A MEMBER OF CONGRESS FROM THE STATE OF CALIFORNIA

Mr. MILLER. Mr. Chairman, I am here in response to a letter you sent me, enclosing a copy of one of the resolutions, inviting me to appear before you.

I want to say at the outset that if this committee comes into being, the Committee on Science and Astronautics will fully cooperate with it.

On the other hand, I can only reiterate what Mr. Vinson told you, that we have the statutory authority over the authorization of the research and development in the National Aeronautics and Space Administration, and we certainly will live up to our responsibility in that respect.

The Committee on Science and Astronautics is a comparatively new committee. We are hampered by several things, and some of

these I would like to tell you about because your committee will be hampered by them.

We have made a thorough search with the Architect of the Capitol to try and find adequate space for our committee, and we have been unable to get this space. It could do much more, but we would have to seat any new employees we put on in the laps of employees now on the payroll.

I will not stand for that.

There just are not quarters here.

We asked to be allowed to go into hired quarters, rented quarters, and suggested that perhaps we could get these quarters in the Congressional Hotel. This privilege was refused us, so I know some of the shortcomings of the committee, but until we get some physical facilities in which the committee can operate, we will have to put up with what we now have.

We have people on the fifth floor of the Old George Washington Inn. I have been up there, but I would not ask at least one important member of my staff to go up there because this man has suffered coronary trouble, and I want to tell you that hiking up five flights of stairs is not conducive to that sort of thing.

The result is that people will go up there in the morning and they take their lunches and they have to stay there all day. We cannot assign too many people to that area. This is just one of the things I wanted to mention.

The next thing is the question of staffing a committee. I suppose we have 300 or 400 applications in our files, but we cannot get the type of people we want, the type of people that are necessary to ride herd on these programs for the money you are able to pay them.

This is important. I leave that with you and whoever is going to chair this new committee.

We have solved this somewhat by obtaining adequate and well-trained officers from the Army, Navy, and the Air Force on a reimbursable basis, but it is very unsatisfactory because these people can only stay with you for 1 or 2 years at the most. If they stay longer, it affects their promotional setup and the type of people we have had and have now I would like to see reach the top in the armed services because they are some of the best that can be had.

Mr. AVERY. Would the gentleman yield there for a moment?

Mr. MILLER. Yes.

Mr. AVERY. Returning to the space problem, as the chairman of the Space Committee, in your opinion which will happen first? Do we get a man to the moon or do we get into the New House Office Building?

Mr. MILLER. I hope we get into the New House Office Building because we have been promised space in there and have been told that we will be able to get in there shortly after the first of the year.

That will allow—

Mr. AVERY. That would solve your space problem?

Mr. MILLER. It would solve our space problem.

This is one of the things that affect us.

I would like to say this with respect to the committee: The Chair raised the question a while ago as to perhaps we had not been more active in the field of some of the responsibilities that are ours.

Our committee at the close of the last session of the Congress was composed of 25 people and we lost 4, but we had 6 people added to the committee, bringing its membership up to 31. We have a grave responsibility.

We tackled it then with 10 new people and 21 old people and it took some time to indoctrinate them. We have not fully done it yet, to bring these people into the picture. I elected to set up three committees; one handling space, one facilities, and one research and development, to hear the NASA authorization bill. These people worked hard and worked intelligently. They got a great deal out of what they have learned in this short time, but the responsibility for a \$4 billion or \$5.2 billion or \$5.7 billion bill is presented to us and it is a grave one.

I can say without fear of contradiction that I do not know of any subcommittee that has worked harder in this House, or has had better attendance, or done its job better than these subcommittees.

In the meantime, while we were doing that, we did not have room or time to do much else, but it is the only way that I know that you can take a third of your committee as recruits and perhaps indoctrinate them into the work of the committee.

Many of them had to learn some of the ways of Congress and some of them are not, perhaps, too familiar with some of them yet.

We do have jurisdiction over the National Science Foundation. We have passed laws and we have held investigations in the past, and we are going to go into this field as thoroughly as we can as soon as we get the NASA appropriation bill, or authorization bill, out of the way, which I hope will be next week.

There are several areas of research and development that come to us, and as a matter of fact, our scope is very broad. Under the rules of the House, we have jurisdiction over astronomical research and development, including resources, personnel, equipment and facilities; the Bureau of Standards, standardization of weights and measures, and the metric system; the National Aeronautics and Space Administration; the National Aeronautics and Space Council; and the National Science Foundation, as well as the outer space, including exploration and control thereof; science scholarships; scientific research and development.

This last jurisdiction is a very broad one. Unfortunately, in the field of science there are many gray areas. There are gray areas that will exist between our committee and the Committee on Armed Services.

As reasonable people, I am certain we can work them out so that there will be no duplication because duplication in the executive branch of the Government, as the very wise Mr. Vinson told you, should be criticized just as we criticize it in the administrative branch of the Government.

The field is new and science is new to most of us.

Many of us scoff at things in science because we do not understand them. I am not a scientist but in my background I spent 4 years as executive officer of the California Division of Fish and Game where I dealt continuously with biologists. I have a great respect for biology and yet it is very easy to ridicule those things that are important to biology.

Sometimes the things that seem small to us are the things from which biologists have learned to prolong life and relieve suffering.

I am conscious of the fact, as I am sure you are, that the progress of this country has been built in fields of science. We are the greatest agricultural producing country in the world. We have fine agricultural products and we produce pigs that will give us big bacon. We produce pigs that give us good ham. We produce chickens and turkeys with big breasts. These are all part of biological science and the science of agriculture and its application to agriculture.

This started years ago and we have learned how to raise cattle in areas where our forefathers never thought cattle could be raised.

We have developed types of grains and sorghums and cottons that compare with any in the world.

This has been done over nearly 100 years of scientific research in agriculture and we have just begun to apply this same intensive type of scientific research in the fields of biology, the field of space sciences, and some of the other sciences.

The work that has been done in the last 10 years in metals has been revolutionary, let alone those in electronics, so it is a big area.

It is one you cannot very well define.

We certainly want to eliminate any duplication that we can and we want to cut fat where we can cut fat, and among other things we have to be very sure that we eliminate the pseudoscientists who sometimes are the most persuasive ones in getting grants from the Government.

Mr. Chairman, as I said in the beginning, I am going to carry out the responsibility of our committee and we will cooperate with you if your committee is formed, but we have the responsibility and we will accept it.

Mr. MADDEN. I just want to ask one question.

If your committee had the space and the personnel to apply to all of these various research programs you spoke about, what would that cost be, so far as your budget is concerned?

Mr. MILLER. I do not know. Our budget is \$150,000 a year. We have never fully used that amount of money because we have not the facilities for putting on the proper people that we should have. I have never given it any thought, Mr. Madden, and I would hesitate to hazard a guess.

The CHAIRMAN. Thank you, Mr. Miller.

Mr. MILLER. Thank you.

STATEMENT OF HON. CHET HOLIFIELD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

The CHAIRMAN. Mr. Holifield, would you rather testify now or come back?

Mr. HOLIFIELD. Your pleasure, sir.

The CHAIRMAN. I understood you would not take a great deal of time.

Mr. HOLIFIELD. A very short time.

The CHAIRMAN. I know how busy you are and I am sorry to have kept you so long.

Mr. HOLIFIELD. That is all right.

I just returned from several days in California and have not had time to prepare a statement, but I would like to just speak very briefly on this problem.

I appreciate your concern over the money that is being spent in science and astronautics for research and development. I have that same concern.

I want to speak this morning as a member of the Joint Committee on Atomic Energy that for 16 years has been struggling with these scientific projects. I also want to speak of a different situation because in the last few weeks Congress has passed bills that multiply the work of that committee by a factor of about five. You have given us jurisdiction over the complete program whereas prior to this time we have had jurisdiction over only a part of the program.

I have spent this year several weeks holding hearings on 65 line items in the atomic energy bill. There will be many more than that next year because of the enlarged jurisdiction given to us by the Congress. That means we will have to go into many projects that were previously under the exclusive jurisdiction of the Appropriations Committee.

We have some staff members skilled in this type of work and are planning to enlarge that staff to do the work necessary in this field. It is difficult for me, and I am sure it must be difficult for some of you members, to realize what a tremendous field the \$14 billion covers, how many thousands and tens of thousands of projects are involved.

I hold before me an inventory of the Federal organization for scientific activities in 1962. There are about 600 pages in this book and the Atomic Energy Commission has 8 pages in those 600 pages. It describes its work in 8 pages. Of course it does not describe it because behind those 8 pages would be several books of the projects it covers.

The one point I want to make this morning is that with all due sympathy to the objective contained in this resolution, I will make the flat statement that a special committee cannot do the job which you are talking about. It will be impossible for them with a limited staff—and I will give you 100 people if you want them on that staff—to do the job of evaluating the thousands and tens of thousands of projects which are involved in this \$14 billion. You cannot do it. I cannot do it. Mr. Vinson's committee cannot do it, and Mr. Dawson's committee cannot do it with the staff we have, and I would say if you set up a special committee, unless you anticipate the hiring of many, many, many more people than we have on our respective committee staffs, you cannot do the job of evaluating these things.

It is all right to talk about coordinating, but you cannot coordinate unless you understand these projects, and you cannot understand these projects unless you compare them with others. I cannot do it myself. I have to hire experts to evaluate and compare the projects, and it may take a week of hearings to decide between two projects as to which I think is right, and I have to do that on the basis of the advice of experts.

I make the flat statement you cannot do it, and when you ask this committee to report back to Congress, there is not enough time. You cannot even put together a competent staff in that time. You will have to spend several million dollars to do what you hope to do in this resolution, and it will take several years for you to accumulate the staff and do the work that is involved. My friend, Carl Elliott—

and he is my friend, I believe—does not realize the tremendous complications that are involved in this thing that he wants to do, and I am just as anxious to see it done as he is.

Therefore, I say, if Congress wants this to be done what they should do is authorize the respective committees of jurisdiction, jurisdiction from the standpoint of authorization, to increase their staff and give them adequate space to do the job within the field of their peculiar expertise and competence.

I would challenge any five Members of Congress to go in the Joint Committee on Atomic Energy and evaluate the projects. They cannot do it. I cannot do it myself and I have experts, boys with degrees of all kinds as physicists and chemists and people like that, and I know the magnitude of the job.

If you want to pass this resolution, I will do everything I can to cooperate with any committee, but you are going down a road that has no gate. You cannot get through it.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Holifield, I recognize the importance of your statement, and I also recognize that this is a job. I had not thought you would tell us it is a job that cannot be done.

Mr. HOLIFIELD. I say it cannot be done within the time or frame of effort contemplated in this resolution. The only way I know it could be done would be to enlarge the staffs of the committees with the responsibility to do this job. If George Miller and I and one or two other members, who have had years of experience in this field, undertook this job, I do not believe we could do the job that you plan to do. I am sorry to have to say that, but those are my sincere convictions. Congress has not equipped itself to do the job it should do in this field. My committee is not doing the job properly.

The CHAIRMAN. It should be done.

Mr. HOLIFIELD. I think it should be done, but I think it should be gone into how it could be done and how it could be done competently.

The CHAIRMAN. Any questions?

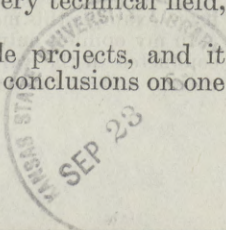
Mr. AVERY. Mr. Holifield, I am quite impressed by your statement and Mr. Dawson's statement. I consider you as an expert because you come here wearing two hats, as a member of the Joint Committee on Atomic Energy and as chairman of the Subcommittee on Military Operations of the Government Operations Committee.

I believe you said you did not think we could undertake this with less than 100 people, and you questioned whether we could do a good job with 100?

Mr. HOLIFIELD. Let me say I pulled that number out of the air and it is a rough number. ARPA, the Advanced Research Projects Agency of the Air Force, has 450 experts evaluating contracts. They have 450, and that is just one section of the Air Force.

Mr. AVERY. I believe you heard Mr. Vinson say the military accounted for 55 percent of the annual budget for research and development. Then I noted these technical reports that the Government Operations Committee put out on the organization and administration of the research and development program, a very technical field, under the Office of the Secretary of Defense.

Mr. HOLIFIELD. That is right. These are single projects, and it takes months of staff work and hearings to come to conclusions on one project.



Mr. AVERY. Does it not seem precarious for the House Committee on Government Operations to take the responsibility of putting out a report with five technical people when you say we need 100?

Mr. HOLIFIELD. No. This is just one project and you are talking about the field.

Mr. AVERY. I read five, which seems to cover the period.

Mr. HOLIFIELD. It covers a period of about 12 or 14 years of effort, about 2 years to a report.

Mr. AVERY. But you feel those reports—and I have not read them—but you feel with five people you could put out a report that would stand up?

Mr. HOLIFIELD. I did put out reports and they did stand up and the Defense Department acknowledged they were fine reports and made changes in their procedures as a result of that.

Mr. AVERY. I have difficulty understanding why a select committee could not do the job.

Mr. HOLIFIELD. Because of the magnitude of the job. You are pointing to one project.

Mr. AVERY. No; I am pointing to 55 percent of the money.

Mr. HOLIFIELD. I would never say my Subcommittee on Military Operations scratched the surface of the projects in the Defense Department. We did not have the time or the manpower to do it. And neither would a select committee be able to do it. I am not bragging. I am apologizing for not doing the job I think Congress should do. We are not equipped to do the job of supervising this gigantic thing which has grown up in the last 10 years almost like Topsy.

Mr. AVERY. In deference to the time, since it is now a quarter after 1, I have no further questions.

Mr. O'NEILL. Mr. Chairman, Mr. Tupper wanted to testify. He is not here, but would it be permissible to place his remarks in the record?

The CHAIRMAN. Yes, but we are meeting again Thursday morning. The statement will be made a part of the record at this point.

(The following statement was submitted for the record:)

STATEMENT OF CONGRESSMAN STANLEY R. TUPPER, REPUBLICAN, OF MAINE

Mr. Chairman, members of the Rules Committee, I would like to commend the chairman, other members of the House Rules Committee, Mr. Brown, Mr. Elliott, Mr. Bolling, as well as any other House Members who are sponsoring this resolution to instigate a thorough investigation of the great number of research programs now being conducted by the Federal Government.

I have introduced a similar resolution, House Resolution 478.

When we consider that approximately \$14 billion has been budgeted by the administration this year for those projects characterized as research, it appears patently clear that there should be a most comprehensive examination made to determine just what is being done in every department and agency of Government of a research nature. Such an investigation is long overdue. Programs have "grown like Topsy"; the results will inevitably show instances of duplication and misdirection. It would not surprise me if the study shows that some vital programs have been woefully shortchanged while others have had difficulty in finding ways to spend allocated funds.

It has been alleged that certain standing committees of Congress have authority to examine this matter piecemeal.

In my opinion only an overall study of the research programs presently being conducted in the various bureaus and agencies will ferret out waste and duplication, and at the same time show us where we need to do more.

Research is a magic word, and it is far easier to initiate research studies than it is to conclude them after assembling the desired information.

I was not too surprised to learn last year from the staff of the Merchant Marine and Fisheries Committee that there were in existence 79 different studies relating to salmon. I might add one action program for salmon and other anadromous species should supplant all or most of these studies.

As a member of the House Subcommittee on Oceanography, I have had the opportunity to brief myself on many Federal activities in this field of science so vital to our national defense and to the benefit of mankind. I think an impartial study of research programs will show oceanography to be one research field that needs more emphasis, but I am equally certain that greater coordination is possible between various agencies in this field.

If this ad hoc committee is created and does its job well, Congress should be apprised of the following:

- (1) A description of each research study now being conducted;
- (2) What the goals of each are;
- (3) The status of each research investigation;
- (4) Conclusions, if any;
- (5) Whether any other agency of Government is performing identical or similar work;
- (6) Whether, in the ad hoc committee's opinion, further study of each particular program is warranted; and, finally,
- (7) Whether more or less financial support for each study is recommended.

The American people have a right to know the facts. Excluding scientific studies bearing on military security, there is nothing so sacred about research programs that they should not have closer public scrutiny.

I have received letters from constituents, as I know all of you have, asking what is being done to protect the health of citizens from dangers arising from overuse of pesticides. Many responsible citizens want to know what progress is being made in determining what effect various derivatives in food have on the human body. The suspicion that our Federal Government is not moving fast enough to protect the public from harmful substances found in certain foods and drugs will continue until the Federal Government is more candid with the consumer.

The proposed House investigating committee will go a long way toward correcting this situation.

The CHAIRMAN. The committee will meet tomorrow on the foreign aid bill, and Thursday morning we will resume hearings on this resolution.

(Thereupon, at 1:20 p.m. on Tuesday, August 13, 1963, the hearing was adjourned until Thursday, August 15, 1963, at 10:30 a.m.)

RESEARCH PROGRAMS

THURSDAY, AUGUST 15, 1963

HOUSE OF REPRESENTATIVES,
COMMITTEE ON RULES,
Washington, D.C.

The committee met, pursuant to notice, at 10:40 a.m., in room H-313, the Capitol, Hon. William M. Colmer presiding.

Mr. COLMER. The committee will come to order. The committee will resume its hearings on House Resolution 455 and companion bills.

Mr. Harris, the committee will be glad to hear from you.

Mr. Aspinall and Mr. Kirwan are here. Are there others who would like to be heard?

(No response.)

Well, very well. Mr. Harris, you may proceed.

STATEMENT OF HON. OREN HARRIS, A MEMBER OF CONGRESS FROM THE STATE OF ARKANSAS

Mr. HARRIS. Mr. Chairman and members of the committee, I appear here this morning in response to a cordial invitation from your chairman with reference to House Resolution 455 and, as I understand, a number of identical resolutions introduced by members of this committee, proposing to establish a select committee for the purposes set out therein to investigate matters of research in the Federal Government.

The Committee on Interstate and Foreign Commerce has not taken any action on the resolution. I have not had the opportunity to bring it to the attention of the committee for that purpose. We had an opportunity to briefly discuss it in a meeting yesterday morning prior to taking up the regular business for which the committee was called into session.

I might say at the outset that the committee has mixed feelings about the resolution. There are some who indicated some questions about it. There are a number of members of the committee who indicated they thought that such a select committee, or a study, or some program should be provided for the Congress in order to try to bring together the information throughout the Government with reference to research. In that respect I simply want to bring to the attention of this committee the work of our Committee on Interstate and Foreign Commerce in this field on the matters in which we have jurisdiction.

In the first place, you are familiar with the work which the Government Operations Committee has done in some of the matters over which we have jurisdiction—the Institutes of Health. That commit-

tee has pulled together substantial information with reference to organization, procedures, and so forth, within the National Institutes of Health that had to do not only with grants and awards in the operation, but in the field of research. There is an abundance of information in this field contained in this particular information.

We, in our committee, have been trying to meet this problem for months upon months in an effort to find out precisely and advise the Congress as to what the information is. You will recall during the last session of the Congress, when we had the food and drug bill on the floor of the House, I advised the House that in this Congress I would direct and set up a program for a Subcommittee on Health and Safety, under the chairmanship of Mr. Roberts, to go into this problem thoroughly.

That committee has been going into these problems where the large program of research is involved insofar as our committee is concerned. The committee has conducted hearings, and I call your attention to a report, a committee print of April 1963, in which we have gotten together substantial information, a volume of information about the whole program, and there are several pages devoted to this work. As to the research program which is being conducted through both grants and contracts by the National Institutes of Health, we have endeavored to see what's going on in the agency and provide factual information without interfering, as some have charged. It is alleged by some of these institutions throughout the country that there is interference on behalf of some of these investigations, having to do, of course, with our own hearing. But we have tried to find out precisely just what is going on in that field, and here we have an additional volume, a committee print of information regarding what is going on in the National Institutes of Health.

Now, insofar as the Federal Aviation Agency is concerned, there are substantial research programs going on. But it is a very limited program in comparison to some of these others, and I do not think that there is anything in the Federal Aviation Agency that would cause any concern insofar as the research program is concerned.

Now, in carrying forward the larger program that we have, we asked the Public Health Service—HEW—to provide us with detailed information regarding these programs from 10 selected institutions throughout the country. Those institutions were the University of Alabama, the University of Arkansas in my own State, Stanford University, Georgetown University, the University of Florida, the Mayo unit, the University of Cincinnati, Ohio State, the Memorial Sloan-Kettering unit, and Baylor University. We have asked them—and we did this months ago—to provide us with detailed information as to what awards, what contracts, what grants had been made to those institutions, so we could get a look at what was going on with reference to the programs of research in these institutions and, therefore, we would have a general pattern of what the situation was. This was developed by the committee, which is available.

We pursued that further, Mr. Chairman, and I am giving you this information to show you what we have done and what we are doing in an effort to give the Congress the benefit of all the information that is available, and by our own committee, too.

We have made a request, then, to these institutions, for additional information which could not be given to us through the Health, Edu-

cation, and Welfare. We have asked them to cooperate with us in providing additional information; that is, the amounts and the sources of Federal funds received by the institutions.

In addition to that, we have asked them to give us information as to the non-Federal funds received by the institution. We have asked them for information as to private funds within the institution such as endowments, and so forth. We have asked them for information on private funds from outside, such as foundations, industry, professional organizations, and so forth, and an abundance of information which we feel is appropriate and which would be helpful to us, in order to obtain for ourselves, for the committee, and for the Congress, the information in this field.

Now, I am one of those who feels that every Member of this Congress ought to have as much information as he or she can obtain. I do not think there should be any limitations placed on our efforts to obtain information, and if such information as would be obtained through a select committee, as proposed here, could be made available and be helpful, I am all for it.

I do think that this would pose a terrific problem for a committee. If it was going to undertake merely to bring together what the rest of the committees have done, as has been the case in certain experiences we have had here, then I think it would be of no avail. If it is merely going to take from the National Science Foundation the information which is pretty well detailed as to research programs, and is going to take from the Appropriations Committee the information that the Appropriations Committee has developed, and from the Science and Space Committee that information, and from the military committee, the Armed Services Committee; if it is merely going to gather information that is already available in order to compile it, then I doubt very seriously the wisdom of such an undertaking; but if there is to be a concerted effort by the committee to gather and obtain all of the facts, across the board—and I use that word advisedly because we are unable in our Committee on Interstate and Foreign Committee to do so, I think it would be a worthwhile undertaking.

If there is going to be a truly across-the-board program to bring together and find out the information which as I undersand is intended under the resolution, then it seems to me from my own viewpoint it would be a worthwhile undertaking.

Our committee would certainly be glad to cooperate with whatever undertaking this Congress would make in order to gather information as to what is going on. We try our best to meet these problems. When we reported the air pollution bill a few days ago, as you were told here when it came up for a rule, we included an amendment there that would prevent duplication. Now that effort, because of duplication, has developed in the committee, and we thought this would be the best way to approach it. The committee was unanimous in its efforts to do that during this year in meeting these problems. We reported the mental retardation and mental health program, finally, yesterday. We included amendments of that kind with each of the titles. That is, titles I and II involved in that bill.

So what we are trying to do as a committee is, in my judgment, to meet the problems which are intended in this resolution insofar as our own committee is concerned.

I would like to call your attention, Mr. Chairman, to one thing, in case a program like this is undertaken, and that is the provision of the resolution itself. On page 2, it has to do with—

(3) the amounts being expended by the various agencies and departments in grants for research.

We find in our study and in our work that, in addition to grants for this purpose, there are substantial contracts, and you will find that those contracts are procedures that have been developed over a period of time and used by the various agencies of the Government in carrying out their program. I would like to suggest for your consideration, if this is going to be a program that is really going to be provided for this purpose, that in order to get all the information it better include contracts with grants, because you are going to get only a part of it and there again it will be insufficient to get what this committee, as I understand, intended and what those who offered the resolutions intended.

Now, Mr. Chairman, the National Science Foundation was organized or came into being through our Committee on Interstate and Foreign Commerce when the distinguished gentleman from Ohio, Mr. Brown, was a member of that committee and participated in it. We felt that it was a very worthwhile program that should be undertaken. I still feel that it was really a forward step. That was in 1943, if I remember correctly.

Now, the National Science Foundation has made tremendous strides in the purpose for which it was organized. Dr. Vannevar Bush was one of the motivating influences behind that program. That was during the time when the atomic bomb was being talked about, in certain circles at least, and it ultimately developed.

Now, the National Science Foundation, when we set it up, was given the specific duty and authority to accomplish and do precisely what this resolution, as I understand it, is intended to do. When we had a reorganization and another committee was established, this agency was taken from our committee and the jurisdiction of it went to another committee. That was appropriate, of course, and the House approved it, and I approved it at that time, because it was thought that the other committee should be set up and devote its attention to these programs. But I call to your attention that when we set up this program, we said for them to do precisely what this resolution here says to do.

Now, if they are not doing it, then that information ought to be made available, too. If they need some help to do it, then the Congress ought to provide that help.

I believe that gives you the benefit of my experience and the suggestions that I have regarding this program.

MR. BROWN. May I ask a question, Mr. Chairman?

MR. COLMER. Mr. Brown.

MR. BROWN. In view of your experience along with some of the rest of us in setting up this National Science Foundation back during World War II, I wonder if you recognize the institution as what we thought it was going to be when we set it up. Hasn't it grown and spread and developed into a lot of—

MR. HARRIS. At that time I don't think we could see what we were going to face in the next few years, at that time. I think Dr. Vannevar Bush had some great ideas.

Mr. BROWN. He didn't stay there too long.

Mr. HARRIS. No, he was getting up in years at that time. I think he had visions as a scientist, a technician, and a research analyst. I think now, as I look back to this, that he probably had some far-sighted ideas, but I doubt if he, himself, had any idea that we would go into a program to the extent and accomplish and be faced with the problems with which we have been faced since then.

Mr. COLMER. Have you anything further, Mr. Brown?

Mr. BROWN. That is all.

Mr. COLMER. Mr. Harris, I am sure that this committee appreciates your contribution here. This committee always feels that you make a valuable contribution.

Mr. HARRIS. Thank you very much.

Mr. COLMER. You always do your homework and know what you are talking about.

I am sure also that the committee shares, to some extent at least, the views that you have expressed here that have bothered some of us.

Now, your committee has been doing some of this very work and is doing some of it now. But it is limited to a particular field, is it not?

Mr. HARRIS. Yes. In the field of research we are limited pretty much in the big program to the NIH and the HEW and, of course, weather research—and other committees are doing some of that, too—and communications, also, as well as some transportation, particularly in the field of aviation.

Mr. COLMER. And that has been true of Government Operations and any number of committees that have been looking into this. But there has been no coordinated effort; no particular committee seems to have jurisdiction of, or has made a study of, the whole picture, and I am sure that is what motivated these resolutions.

Now, I am sure that the gentleman from Arkansas, as chairman of his important committee, realizes there is considerable duplication here—or does he—

Mr. HARRIS. Obviously there must be. I would, of course, want to have some understanding of what we mean by duplication. If we mean that an institution is getting research from the National Science Foundation and from the military and from NASA, and so forth, yes.

Mr. COLMER. No, on the other hand, I think, and I recognize the limitation of this proposed committee, in that it is purely a factfinding and a study committee and does not have legislative jurisdiction. In other words, in a sense a report will be filed eventually containing, I am sure, much valuable information, but then the question of implementing that arises. What I am trying to say is, I am sure we are all in agreement that if some legislative committee had jurisdiction over the whole field and operated in that broadest sphere, and then implemented its own findings, we would possibly be in better shape than we would be with such a resolution. Yet I don't think that maybe that is practical. I doubt if that will be done.

I just wanted to make my little contribution to the gentleman's thinking in this field.

Mr. HARRIS. I share the gentleman's feeling. I don't think it would be possible to put the whole field of research in one particular committee. We recognized that at the time the new Space Committee was set up. Because of the many intricate facts involved, we re-

tained jurisdiction insofar as research is concerned in the weather operations, in communications, and as far as FAA is concerned. It is just like it is with other committees in the House, it is impossible to avoid some overlapping. It just simply cannot be done where we have involved problems, and where problems of this particular operation will overlap with the problems of another operation. We have it in our everyday lives, as a part of it.

Mr. COLMER. Mr. Delaney.

Mr. DELANEY. I think the testimony you give hits at the very heart of this.

While this is a worthwhile resolution, and I agree with that thinking, it seems to me it is impossible for any five Members of Congress to make a complete, full, and thorough investigation of the numerous research programs being conducted by sundry departments and agencies of the Federal Government. First of all, there would be a paralleling, and when you think of the number of committees that we have in the House—your Interstate, Education, Agriculture, Space, Armed Services, and the Appropriations—it would be humanly impossible, in my opinion, to carry out any phase.

Take your committee, the Interstate Committee, you have food and drug. You could use these five men and they wouldn't even scratch the surface, to go into the various aspects of food and drug, much less mental health, or your communications, or your aviation. I say it would be impossible to carry out the intent of this resolution, because in any one of those fields they either go to the agencies and take their material or they make an investigation of their own. If they were to make an investigation of their own, it would be a full-time investigation on any phase of that, and yours is only one committee. Then if we take Agriculture and Armed Services, Space, and all these other things, it would be humanly impossible for any five men in Congress to do a thorough job.

You chairmen of committees of course are jealous of your jurisdiction. From time to time you come up here and ask that you have the right to follow through to see where your money is spent. It would seem to me this would be a conflict with all of the committees. Then when we got through with this the best we could do is recommend to your committee, or any other committee that has jurisdiction, what action should be taken. While this is an ambitious program and is unquestionably worthwhile, it seems the best we could do would be to divide it up into the various phases. And even in your committee, you have to have four or five subcommittees who are familiar with this to carry out the intent. They either take the facts as given to them by the various agencies and subagencies, or they make an investigation of their own.

Incidentally, if they would make an independent investigation, there could be a full-time committee on any one of the various phases that you have to go into. So I don't see how we could do a worthwhile job with this resolution as it is written. I think you should follow up on all the money spent in your committee, and then you have a major job. If you want to go to the facts, each one of those committees would be working almost every day in the week and still they couldn't scratch the surface.

Mr. HARRIS. I will say to the gentleman I have had a subcommittee that has been working on it since shortly after the first of the year, and they are not anything like through yet.

Mr. DELANEY. You and I know about food and drug. If you went into that, that would be a full-time investigation every day in the week.

Were you to go into communications, it would be a full-time job. Were you to go into aviation and all the phases—the noise and the problems of the use of land, and so forth, and all these research programs, that would be a full-time program.

Mr. HARRIS. It is like our work in the Congress, we never get caught up.

Mr. DELANEY. While I think the aim is worthwhile, from a practical standpoint I don't see how we could ever report anything that would be worthwhile.

We have a duplication here. We have the jealousies of the various chairmen of their own jurisdiction. While I agree with the aim, I don't see how it possibly could be done in an effective manner.

Mr. COLMER. Mrs. St. George.

Mrs. ST. GEORGE. It seems to me this resolution is contemplated to be helpful to various committees. I am inclined to agree with my colleague from New York on this matter. I think it is an impossible task. I would like to ask you, in your open opinion, with your experience, do you think this resolution would be helpful to your committee?

Mr. HARRIS. I would say in all candor to the gentlelady that if sufficient funds were made available and qualified staff personnel was obtained and there was sufficient time—and I am convinced you can't do it by September next year—and they would go into these things from a new start, de novo proceedings, I can see where an investigation might turn up some information that would be helpful; but if we were going to have just a five-man committee with a limited staff, inexperienced people, I will say in frankness that I think the experienced staffs that the various committees have, with the members of the committee who live with these problems over a long period of time, can accomplish far more than someone inexperienced and unfamiliar with the problems. If there is an experienced and ample staff, yes; but if you are just going to go out and pull together a lot of information we are already working on and have been for years. I think we might as well not have it.

Mrs. ST. GEORGE. That answers my question.

You have brought up another thing, that your experienced staff in your committee might not be an experienced staff for the Armed Services Committee. It might not be experienced in foreign affairs. I can see where the staff would go on and on, building up. We would have more on the staff of this committee probably than in the whole Congress.

Mr. HARRIS. I think it would take a long time to accomplish its purpose. I think the purpose of the resolutions are laudable.

Mrs. ST. GEORGE. Thank you, Mr. Chairman.

Mr. BOLLING. Mr. Harris, I have a resolution identical to the one Mr. Elliott introduced. Of course, I speak only for myself at this stage of the game, but I would contemplate that the committee, if established, would do both of the things that you suggest. First, it would collect in one place all the information that is available within each of the committees that have any jurisdiction over any research and, at the same time, it would collect all the information that it could obtain from all of the agencies that are involved in research.

That would be its preliminary task. Having done that preliminary task, it would then identify possible areas of further investigation in the nature of overlap, conflict, waste, and so on. And in that respect it would be doing what you described as a good deal of de novo work.

Does that sound to you like a practical approach, if that were the approach? In other words, take advantage of everything that is available and then go beyond it.

Mr. HARRIS. I think any committee set up should have available to it any information from any of these committees, and certainly my committee would cooperate completely.

Mr. BOLLING. Now, my second point: Would this seem to you a practical approach to this massive \$15 billion problem, and would you think that under those circumstances, and taking advantage of the knowledge already gained by so many others, in so many other committees, both members and staff, that this then would be a feasible operation perhaps in a good deal longer time and perhaps with a larger committee than proposed in the resolution?

Mr. HARRIS. I think that would be something well worth considering. Far be it from me to suggest what such a committee should do, but I should think that to take something like what has already been prepared—and this is from the National Science Foundation—"A Survey of Science Resources Series," and this is for the fiscal years 1961, 1962, and 1963, and to take this information which is supposed to be the same information that I understand this resolution would bring about, such a committee could go into this program—though I understand Mr. Miller and his committee are already going into it to find out if they are presenting the right information and correct information, if they are getting it together and making it available to the Congress. And here is the "Organization for Scientific Activities for 1962." This is just for 1962. I would think if such a committee was set up, you would want to go into this.

This is in some detail and I can say to the gentleman you can get it in far more detail than this.

Now, such a study could be made by going into these various agencies that have compiled it to see if they are giving us the information.

Now, you have your Appropriations Committee. The Appropriations Committee comes along, following the legislative committees. We have two ways in our regular legislative processes to get at this on behalf of the Congress. First, through the authorization, and then through the appropriation. I think all of us could be a little more diligent than we are in observing what is going on in these, and maybe cooperating and coordinating with each other on it.

Yes, I think it could be helpful.

Mr. BOLLING. Thank you.

Mr. MADDEN. Any other questions?

Mr. AVERY. I think this colloquy between the gentleman from Arkansas and several members of the committee sort of points up a point made by Mr. Vinson the other day. As I recall, Defense represents 55 percent of the total amount of money spent for research and development. Space comes along with the 25-percent

figure; Atomic Energy with the next 15. All the rest of them added together represent only 10 percent, and, if I remember in detail, the Department of Health, Education, and Welfare represented only about 1 percent of the 10, or something like this, anyhow. So, in view of all of the problems that the gentleman from Arkansas has presented, we are only talking about 1 percent of the problem. So, in effect, it is about 100 times as great as even you have presented it here this morning.

As this hearing moves on, I am a little inclined to become skeptical, at least, as to whether or not a select committee could provide any information that would be helpful beyond what is already being done, certainly by the Committee on Interstate and Foreign Commerce, in this limited field.

The only other thing I could say would be in the way of a question. You mentioned the contract phase, and I think this is significant. When a grant, per se, is made, isn't that made under a contract?

Mr. HARRIS. No, they have contracts made with the agencies to carry out certain research programs.

Mr. AVERY. In addition to grants?

Mr. HARRIS. Yes, sir.

Mr. AVERY. Then I think your comment is very well taken.

This is all Mr. Chairman.

Mr. SISK. Mr. Chairman, I would like to ask the distinguished chairman of the Interstate and Foreign Commerce Committee a couple of questions with reference to the National Science Foundation.

Now, at the time when your committee had jurisdiction over the National Science Foundation, did you annually consider an authorizing bill with reference to funds and programs and policies of the National Science Foundation prior to its consideration by the Appropriations Committee?

Mr. HARRIS. The gentleman raises a very important point that I have been pursuing now for the last 2 or 3 years, or in recent years anyway.

I think why we have probably gotten into this difficulty we are in, or where there is a lot of question about what might be going on here and there, is the fact that we have in the past been given open-end authorizations. Now, we caught that sometime ago when the gentleman from Kansas, I believe, was on the committee, and we started closing up those open-end holes, and all of our authorizations now are for a specific period of time. We have Hill-Burton, FAA, the research facilities program, and many others that we have had. We are doing it now.

Mr. SISK. That brings me then to the point that I had in mind. It is my understanding, based on testimony of the people on the Science and Astronautics Committee, that, of course, they have no authorizing jurisdiction, let's say, over the programs or the funds for the National Science Foundation, although they have technical jurisdiction, as it was transferred from your committee to their committee.

Mr. HARRIS. What do you mean, they don't have authorizing jurisdiction?

Mr. SISK. As I understand, it is not annual authorizing.

Mr. HARRIS. They could abolish it if they wanted to.

Mr. SISK. That is correct, but the National Science Foundation doesn't appear before the committee—

Mr. HARRIS. I don't suggest it, however.

Mr. SISK. I agree with the gentleman, and I don't wish anything I say to be unduly critical of the National Science Foundation, because it is probably an excellent institution, and yet we know there is a lot of criticism. For example, if the gentleman was in the room yesterday or the day before yesterday, when the chairman read about various biology, bumblebees and so on—I am not necessarily critical of these but, in line with these very projects, there is no committee that takes jurisdiction over these various programs. As I understand it, this is a matter handled purely by the Appropriations Committee.

Mr. HARRIS. But each committee has to authorize it. They have to have an authorization, or the Appropriations Committee cannot appropriate.

Mr. SISK. I know, but isn't it a fact that it is an open-end authorization, and they do not have to come in annually to justify their request?

Mr. HARRIS. That is true, but they could close it.

Mr. THORNBERRY. The Committee on Space tomorrow could introduce a bill saying "We are going to have annual authorization."

Mr. SISK. This brings me to the point I am talking about. They do not do that at the present time, and I am asking the gentleman does he think they should do it. Do you think they should justify these programs?

Mr. HARRIS. I think the Appropriations Committee has a tremendous task, a very difficult responsibility, and I think the legislative committee probably should help the Appropriations Committee.

We have over the years, certainly since I have been chairman, in every Congress had all of these agencies under our jurisdiction come into the committee to give us a report each year. They give us a status report each year. We do that for two reasons: One is to let the new members come in to be informed about what our work is, and then to get reports from these agencies on what they are doing. We do that every 2 years.

Mr. SISK. That was the point I was attempting to bring out, because as I understood the members of the Space Committee the day before yesterday testifying, they, of course, do not annually authorize these various programs.

Mr. HARRIS. I think they have an annual authorization for the space program.

Mr. SISK. Certainly they do with space, but I am referring to the general operation of the National Science Foundation and the multiplicity of projects and programs which they involve themselves in. Time after time on the floor we hear criticisms of all kinds of what some people feel to be farfetched programs.

Now, I understand that Dr. Waterman has recently retired and they have now a new head of the agency. I don't know whether there will be any change in policy, and I don't infer any criticism of Dr. Waterman.

Mr. HARRIS. He has been of great service.

Mr. SISK. Thank you, Mr. Chairman.

Mr. COLMER. Any further questions?

Thank you very much, Mr. Harris.

Mr. HARRIS. Thank you very much.

**STATEMENT OF HON. WAYNE N. ASPINALL, A MEMBER OF
CONGRESS FROM THE STATE OF COLORADO**

Mr. ASPINALL. Mr. Chairman and members of the committee, as a rule I do not talk from notes, but in the interests of time, I would like to read from my manuscript. It is a very short manuscript this morning.

Mr. COLMER. Very well.

Mr. ASPINALL. In response to your invitation I am pleased to appear, in behalf of the Interior and Insular Affairs Committee, on House Resolution 455 and identical resolutions.

Although the Interior and Insular Affairs Committee, as a set group, has not given consideration to this resolution, I believe that I can assure this committee that we favor its purpose and objective. As I understand the resolution, it would create a select committee to make a thorough investigation into the Federal Government's overall research effort, and recommend to the House legislation to provide the means, on a permanent basis, whereby Congress can better understand the various research programs and then make the decisions which Congress must make with respect to these programs.

And may I interline here, the committee of which I am chairman works very closely with the Committee on Appropriations. We also disclose our committee authorizations for the expenditures of money, and, whenever there are any questions at all, Mr. Kirwan and I are in constant touch with each other.

With the Federal Government's spending for scientific and technological research already up to around \$15 billion annually, it seems essential that Congress have a more adequate procedure for determining justification and need, including access to high-caliber scientific advice independent of the executive branch. Fifteen billion dollars is one-sixth of the total budget, and it is one-fourth of the total open-end budget, as far as that is concerned, not counting fixed charges.

May I say that I sometimes look at this from a little different angle than some people do? The greatest crimes of history have been committed in two of the greatest goals of people—liberty and religion—and the greatest possibility of overspending and wasting money today in our form of government is in this question of science and scientific research. I am not saying they do, but the possibility is there, unless we close the end some way or other.

I know that several suggestions for accomplishing this have already been made, including a joint committee on science, a scientific accounting office, such as GAO, and a Congressional Office of Science and Technology along the lines of Dr. Wiesner's office in the executive branch. It has also been suggested that the various committees have scientific advisers. It is my understanding that the select committee which would be created by House Resolution 455 would study all of these suggestions in making its recommendations to the House. I know there is support for letting each of the

SEP 23 1954
U.S. HOUSE OF REPRESENTATIVES
INSULAR AFFAIRS

legislative committees exercise proper surveillance over the agency programs under this jurisdiction. This may be the most effective procedure, but the committees would require additional staff and space and it has the disadvantage that duplication and overlaps among departments would go unnoticed.

My committee has been concerned that the Department of the Interior has embarked upon rather extensive research programs in several fields, not as large as some of the other committees having jurisdiction over more extensive fields, but at least in this small area. I realize that the amounts involved for research by Interior agencies are small compared with the expenditures by the Defense agencies, NASA and AEC. However, the same determinations are needed with respect to the proper Federal role and to the values that will be received from the expenditure of our research dollars. I favor worthwhile research, but I am concerned that there may be duplication and waste in the name of research. There is a shortage of qualified scientists and technicians in all the research fields, and worthwhile research probably will be limited by the availability of qualified personnel. Close coordination among all Federal agencies that are conducting research in the same general field is essential.

My committee has been considering legislation to establish a new water resources research program. We have found that there are eight different Federal departments and independent agencies conducting research in this field. Between them, they are requesting about \$77 million for this fiscal year, an increase of \$11 million over last year. The new program which we are considering would involve another \$20 million annually. We are trying to determine whether this new \$20-million-a-year program can be justified, in full or in part, and how best to fit it into the Federal Government's present overall water research effort without duplication or waste. You members know how difficult it is to resist the efforts on the part of the Department to bring in a new research operation.

My committee has also been looking into some of the research activities of the Bureau of Mines and the Office of Coal Research. The Mines and Mining Subcommittee spent several days in hearings on a single research contract referred to as Project Gasoline, which involves obtaining gasoline from coal. More than \$10 million is involved. Now we are talking about little figures, because that is what my committee has jurisdiction over, but the same problems are involved in the larger amounts and the larger programs. This relatively minor research project took an unjustified amount of the subcommittee's time and pointed up the need for high-caliber, independent scientific advice. It was suggested that the committees have oversight responsibility, but let me tell you that the oversight responsibility is a difficult matter to take care of in the time allotted to the various committees. These are some of the problems we have had. In closing, let me say that I am very much in sympathy with what Chairman Smith and other members are trying to do in the resolution. The question is how best to accomplish the objective. The Interior and Insular Affairs Committee will be very much interested in the work of the select committee, if it is created, and will be glad to cooperate with it in every way

possible, to try to find some means by which you can put some sort of a horizon to the expenditure of Federal moneys in a very necessary program, but a program that has no limits whatsoever, and that is research.

Thank you very much.

Mr. COLMER. Off the record.

(Discussion off the record).

Mr. COLMER. Thank you very much. Are there any questions?

Mr. DELANEY. On the scientific research, of course, you do not anticipate ultimate success in any of these projects.

Mr. ASPINALL. If you did, private industry would take care of it.

Mr. DELANEY. Private industry and the successful people in private industry are those who invest the most money in scientific research. They are the successful businessmen.

Mr. ASPINALL. The gentleman is correct.

Mr. DELANEY. Those who have failed to go into research are those who are just marking time or going backward; where they invested money in scientific research, we find they are ultimately successful and those that devote the most, I think, their profit figures show the results.

We spoke of contracts a short while ago. Many of these contracts are for research and development. A great number of them are classified. The Government has a problem, say, in armed services or in space. They give to the best minds a research problem. Perhaps all that money is wasted but we made an attempt.

We can go back to the Manhattan project and before that was successful I think nearly \$2 billion was spent. It was a question of whether we were to go on or not. Ultimately we went on. If we had a committee of this type and they were delving into the money that was spent, I say a large amount of money, they might have discouraged continuance of that research program.

Mr. ASPINALL. May I reply? I do not think they would. I belong to the Joint Committee on Atomic Energy.

Mr. DELANEY. I say they might have. I do not say they would have, but there is a certain amount of money that is spent in research; whether you are successful or not, at least you get to the issue as to whether or not to continue to go on. I think we have got to put more money as time goes on into research and scientific development of all kinds. While the amount is large, it is just like when we were planning our planes, et cetera. By the time we get a model we find out it has to be altered and by the time we start building there are new innovations that they discover. Ultimately the research costs more than maybe the program, but we get a final product that is far superior or better.

Mr. ASPINALL. May I just reply to my colleague?

Mr. DELANEY. Yes.

Mr. ASPINALL. My vote has always been for these research programs. As my colleague notes, and I sit on a committee that has jurisdiction over one of the largest expending operations that there is, all I say is that you can waste an awful lot of the taxpayers' money in these programs. Whether or not this proposal will save any of that money I do not know, but I know that duplication is rampant in the Federal executive agencies at the present

time and unless Congress does something about it, we are going to waste more and more money.

Mr. DELANEY. I think we must yield to the sincerity of anyone bringing the resolution. The figures are large, but at the same time we have got to continue this research, whether it costs a lot of money or not.

Mr. COLMER. Is that all?

Mr. DELANEY. Yes, sir.

Mr. COLMER. Any further questions of Mr. Aspinall? If not, thank you very much.

Mr. ASPINALL. Thank you.

Mr. COLMER. Mr. Laird.

STATEMENT OF HON. MELVIN R. LAIRD, REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

Mr. LAIRD. Thank you, Mr. Chairman, members of the committee. I introduced this resolution and I was here on Tuesday to listen to the testimony of the original sponsor of the resolution, Mr. Elliott. I support this resolution for a variety of reasons and join in the remarks made by Mr. Elliott in support of the resolution on Tuesday.

I think there are several other aspects of this resolution, however, that should be brought to the attention of the Rules Committee and I first refer particularly to this whole question of research grants and research contracts.

We are in a position on the House Appropriations Committee—I serve on the Subcommittee on Health, Education, and Welfare and also on the Defense Appropriations Subcommittee—where we are confronted with a real problem. We have nine departments that are in the research program in a major way. Each of these agencies is conducting its business with the universities and colleges around this country in a variety of ways. We have different overhead limitations on all of these grants. We have no limitations on the overhead costs as far as contracts are concerned.

We have some contracts running as high as 55 percent on overhead costs; we have other contracts running as low as 7 percent on overhead costs. We have research grants under the jurisdiction of some committees with a research overhead limitation of 20 percent. We have other research grants with these colleges and universities running at an overhead cost limitation of 25 percent and we have other Federal research grants with no overhead cost limitation.

This resolution it seems to me gives us a good opportunity to look at this problem on an overall basis, to look into the jurisdictions of all of these various agencies that are concerned with research and try to bring about the necessary coordination which I think is most important for a successful program.

There are many areas where we have duplication of effort and this can only be handled I feel by setting up a select committee. Let's take for an example some of the legislation that will be before this committee within the next few weeks. The Ways and Means Committee has reported out H.R. 7544, which is presently before the Rules Committee, dealing with mental health and mental

retardation. This particular bill authorizes a new research program in the area of mental retardation. The Ways and Means Committee handles this particular research program because it is under the Bureau of Family Services, which in turn is under the Social Security Administration. The Ways and Means Committee has jurisdiction over the Social Security Administration; therefore, this piece of legislation providing for this new type research program in mental retardation should properly be before the Ways and Means Committee.

There is a bill before Chairman Harris' committee which is presently being marked up in that committee, S. 1576, which sets up another mental retardation research program. This research program will be under the control and the administration of the Public Health Service; and, because the Public Health Service is part of the jurisdiction of the Interstate and Foreign Commerce Committee, this legislation properly is before the Interstate and Foreign Commerce Committee, setting up a new program in the area of mental retardation research and in mental health research.

Presently we have programs in mental retardation and mental health research. In the area of mental retardation, in the fiscal year 1963, the NIH will expend over \$200 million in basic research in the field of mental retardation and mental health. We have three other going programs in research in mental retardation and mental health at the present time. There is now a lack of coordination. This is something that we in the legislative branch should take note of and this is the kind of service I think can be performed by a committee set up under the terms of the resolution introduced by Mr. Elliott and me.

I do not believe that this committee should become project officers to investigate each individual research grant or contract. That should be left up to the committees that have the jurisdiction. The committee created by this resolution should look at the research program on an overall basis to see that we are receiving proper use of the research dollar.

At the present time, the amount of research money that is made available is some \$14 billion for fiscal year 1964 if the present budget estimates are enacted by the Congress. This program, projected through 1970, looks like it will be, if it grows at the same rate it has grown in the last 10 years, in the area of an annual cost of \$36 billion as far as Federal tax dollars are concerned.

I think, with the growth of the research program through Federal support and continued support of the Congress, that it is necessary for an overall look to be taken at the entire program.

I might also say that the support that the Federal Government is giving research activities today has a greater effect upon the economic growth of various areas of our country than any other dollars that are made available by the Federal Government.

The research dollar that is spent by the Federal Government multiplies many times as far as economic growth is concerned in the areas involved. The location of Government-financed laboratories attracts much industry and related industrial development.

We are developing in this country economic wastelands in some sections of the United States by the concentration in certain areas of the Federal research establishments. This committee should look into this quite thoroughly as one of its No. 1 priorities.

The National Science Foundation has recently completed an interesting survey on their research projects. A map is included in this report, released a week ago Sunday, which is quite revealing. It shows the effect of the National Science Foundation programs on the various areas in the United States.

We find ourselves today in a position where 8 out of 10 of the graduating scientists and engineers that are coming out of our universities and colleges are going to work on projects that are supported by Federal dollars in the area of research. This ratio has remained quite constant for the past 5 years.

This country is giving greater support to research than any other country. The direction of this massive research effort is quite different from any other country of the world. Industrial development research such as the flatiron and the other products that sell on the world market has fallen behind. In Japan, Western Germany, and in the Common Market countries, you will find a much greater proportion of the total research dollar being expended in the area of industrial research in order for them to attract and to keep world markets. This whole area is one that needs to be gone into very thoroughly.

I do not look at this resolution on the basis that it is a resolution to investigate individual projects which have been approved or disapproved by the various agencies involved. This resolution makes possible a much broader study and is directed to the very basis of the overall research program, private and public, which we have in this country. As we go down the road, this committee should be of major significance to the Congress, to the executive branch and to economic development of our whole country.

Mr. COLMER. Thank you, Mr. Laird. That is a fine statement. Are there any questions of Mr. Laird?

If not, thank you very much.

Mr. BROWN. I would just like to compliment the gentleman on his statement. He is in the position on two very important appropriations subcommittees where he does have available a great deal of information on which he has based his statement. I was especially interested in what you said about industrial research. I have tried to bring the point out a time or two in some of these hearings that we have been falling behind in industrial research and some of these days we won't be able to support the type of government we have today if our industrial economy in this country does not keep step with the rest of the world in producing new equipment and new products on a basis that they will sell on the markets of the world. I think that point you brought out is very, very important.

Mr. LAIRD. I thank the gentleman.

Mr. COLMER. Thank you again.

The committee will be glad to hear from Mr. Kirwan at this time if he is ready.

STATEMENT OF HON. MICHAEL J. KIRWAN, REPRESENTATIVE IN
CONGRESS FROM THE STATE OF OHIO

Mr. KIRWAN. Mr. Chairman, members of the committee, Mr. Cannon, chairman of the Appropriations Committee, asked me to come here or try to point out our views on this resolution.

Two-thirds of all the money spent on research and development in America is now being spent by the Federal Government.

I have often said in recent years that the greatest word introduced into the budget is "research."

I have suggested to the chairman of your committee that one more man be added on this proposed select committee and let him do nothing but try to find out who put that word "research" into the budget. We did not have that magic word back in the good old days when we had balanced budgets.

I can take you in any room where hearings are being conducted by the Appropriations Committee and the main topic is research. That seems to take up most of the time of our hearings.

Let's take water. I happen to know a little about water. I am chairman of the subcommittee that deals with some of the agencies conducting water research—but only some of them. Seventeen agencies came in and made a request for water research funds. Just stop and think. There are 17 agencies. Two of the best qualified agencies in the world in the field of water are Reclamation and Geological Survey. They have loaned their men to nearly every nation in the world to advise them on water. Yet we have 15 other agencies coming in here wanting to research on water.

One Department of the Interior head requested funds to begin a 10-year program at a cost of \$20 million to research on the bottom of the ocean. I sent for him and I said, "It kind of looks like you ran out of work. You do not know what to do with your employees. There are several agencies already working on this and you will only duplicate their activities." We left the money out of the bill and I'm sure we will be able to get along without still another agency getting into oceanography.

Take weather, for instance. We have nine departments and numerous agencies researching the weather. The 1964 budget for weather research and development totals \$138 million.

Oceanographic research was only \$24 million in 1958. By 1962 it had expanded to \$104 million. By 1964 it will be \$156 million. The plan calls for \$350 million by 1972.

I remember at the turn of the century seeing a show called "The Vinegar Barrel." The leading character in that was Israel Campbell. He was the weather bureau because he was the tallest fellow in the town. They would ask him, "Do you think there will be any rain today?" I think the system then was almost on a par with what it is today.

I do not want to take up too much of your time, but let me read something to you. The inventions I will read to you came into being generally without any Federal funds. These date as far back as the 15th century. The rolling mill, electricity, knitting machines, thermostats, telescopes, adding machines, airmeter, air

pump, first steam engine, coke burning iron furnaces, typewriter, first use of mercury thermometer, steel crucible process, steam engine, discovery of uranium, power loom, parachutes, cotton gin, soda from salt, electric battery, rockets, canning of food, miner's safety lamp, silicon, portland cement, first successful steam locomotive, braille printing, sewing machine, chloroform, babbitt metal, telegraph perfected, ether as an anesthetic, nitroglycerine, rubber dental plates, gas burner, bessemer steel, railway block signals, dynamite, antiseptic surgery, telegraph, telephone, phonograph, incandescent lights, color photography, fountain pen, manganese steel, gramophone, rubber tire, process for hardening surface of steel, acetylene gas, motion picture, X-ray, telegraphy, foundation laid for radioactivity, steel rail, cellophane, airplane engine, insulin, television, first liquid propelled rocket, first liquid fuel, penicillin, discovery of heavy hydrogen, and many, many others if I had time to read them.

There wasn't one dime of Federal money spent on these inventions. If you took 17 of those inventors and put them in the one room, like the 17 agencies that are hollering for water research today, they would have had a town on the moon long ago. I mean that with sincerity.

I would like to place this whole list in the record, for it shows what was invented down through the ages before we invented the word "research" by generally private initiative and financing.

(The list is as follows:)

Date	Invention or discovery	Inventor	Nationality
Ca. 1496	Rolling mill	Leonardo da Vinci	Italian.
1560-03	Electricity and magnetism	William Gilbert	English.
1589	Knitting machine	William Lee	Do.
1593	Thermometer	Galileo Galilei	Italian.
1609	Telescope (refracting)	do	Do.
1642	Adding machine	Blaise Pascal	French.
1643	Barometer	Evangelista Torricelli	Italian.
1654	Air pump	Otto von Guericke	German.
1669	Phosphorus	Henning Brand (Brandt)	Do.
1690	1st steam engine with a piston	Denis Papin	French.
1698	1st practical application of steam power for mechanical purpose.	Thomas Savery	English.
1709	Coke-burning iron furnace	Abraham Darby	Do.
1714	Typewriter	Henry Mill	Do.
1714	1st use of mercury in thermometer	G. D. Fahrenheit	German.
1740	Steel crucible process	Robert Huntsmand	English.
1765	Steam engine (condensing)	James Watt	Scottish.
1779	Discovery of elements, uranium, titanium, zirconium.	Martin Heinrich Klaproch	German.
1785	Power loom	Edmund Cartwright	English.
1785	Parachute	Francois Blanchard	French.
1790-91	Soda from salt	Nicholas LeBlanc	Do.
1793-94	Cotton gin	Eli Whitney	American.
1800	Electric battery	Alessandro Volta	Italian.
1804	Rocket	Sir Walter Congreve	English.
1804-5	Canning of food	Nicolas Appert	French.
1808	Barium, strontium and calcium metallic magnesium first prepared.	Sir Humphry Davy	English.
1815	Miner's safety lamp	do	Do.
1823	Silicon	J. J. Berzelius	Swedish.
1824	Portland cement	Joseph Aspdin	English.
1825	1st successful steam locomotive	George Stephenson	Do.
1829	Braille printing	Louis Braille	French.
1830	Sewing machine	Barthelemy Thimonnier	Do.
1831	Chloroform	Samuel Guthrie	Scottish.
1834	Discovery of aniline in coal tar	Friedlieb F. Runge	German.
1835	Revolver	Samuel Colt	American.
1838	Babbitt metal	Isaac Babbitt	Do.
1840-1844	Telegraph perfected. First message sent 1844.	Samuel F. B. Morse	Do.
1842	Ether as an anaesthetic	Crawford W. Long	Do.
1847	Nitroglycerine	Ascanio Sobero	Italian.
1853	Condensed milk	Gail Borden	American.
1855	Rubber dental plate	Charles Goodyear, Jr.	Do.

Date	Invention or discovery	Inventor	Nationality
1855	Gas burner (Bunsen burner)	Robert W. Bunsen	German.
1856-57	Bessemer steel	(William Kelly Sir Henry Bessemer	American. English.
1863	Railway block signals	Ashbel Welch	American.
1864	Sleeping car (with folding upper berth)	George M. Pullman	Do.
1866	Dynamite	Alfred B. Nobel	Swedish.
1869	Antiseptic surgery	Sir Joseph Lister	English.
1873	Telegraph (quadrex system)	Thomas A. Edison	American.
1876	Telephone	Alexander Graham Bell	Do.
1877	Phonograph	Thomas A. Edison	Do.
1879	Incandescent light	(do Sir Joseph Swan (independ- ently).	Do. English.
1880	Evaporated milk	John B. Meyenberg	American.
1881	Color photography	Frederick E. Ives	Do.
1882	Tuberculosis bacillus isolated	Robert Koch	German.
1882	Hydrophobia bacillus isolated	Louis Pasteur	French.
1883	Cholera bacillus isolated	Robert Koch	German.
1883-1884	Diphtheria bacillus isolated	Edwin Klebs	Do.
1884	Bacillus of tetanus	Arthur Nicolaier	Do.
1884	Fountain pen perfected	Lewis E. Waltherman	American.
1884	Artificial silk	Count Hilaire B. de Char- donnet.	French.
1884	Manganese steel	Robert Hadfield	English.
1887	Gramophone	Emile Berliner	American.
1888	Pneumatic tire	John B. Dunlop	Irish.
1888	Process for hardening the surface of steel (Harvey process).	Hayward A. Harvey	American.
1892	Acetylene gas	Thomas L. Wilson	Do.
1893	Motion pictures (Kinetoscope)	Thomas A. Edison	Do.
1895	X-ray	Wilhelm K. von Roentgen	German.
1895	Wireless telegraphy	Guglielmo Marconi	Italian.
1896	Foundation laid of science of radioactivity	Henri Becquerel	French.
1898	Radium discovered	Madam Marja S. Curie	Do.
1899	High-speed steels	Frederick W. Taylor	American.
1900	Cellophane	J. E. Brandenberger	French.
1902	Discovery of the spontaneous disintegration of atoms.	E. Rutherford	English.
1903	Airplane	Wright Brothers	American.
1905	Gyroscopic compass	Elmer A. Sperry	Do.
1905-1916	Theory of relativity	Albert Einstein	German.
1910	Cosmic rays discovered	A. Gockel	Swiss.
1911	Atomic nucleus analyzed	E. Rutherford	English.
1912	Flying boat (seaplane)	Glenn H. Curtiss	American.
1913	Geiger counter perfected	Hans Geiger	German.
1913	Ramjet engine	Rene Lorin	French.
1914	Liquefaction of coal (for producing gasoline)	Friedrich Bergius	German.
1918	Ultrasonic wave detector of submarine objects.	Admiralty Experiment Sta- tion.	English.
1922?	Insulin (isolation)	Sir Frederick G. Banting	Canadian.
1925-26	Television	John L. Baird	Scottish.
1926	First liquid propelled rocket	R. W. Goddard	American.
1926	Rocket (first liquid fuel)	Robert H. Goddard	Do.
1928	Penicillin	Sir Alexander Fleming	English.
1930?	Discovery of heavy hydrogen	Harold Urey	American.
1934	Disintegration of uranium	Enrico Fermi	Italian.
1935?	Kendall's compound E (forerunner of corti- sone).	Edward C. Kendall	American.
1935	Radiolocator (radar)	Sir Robert A. W. Watt	Scottish.
1935	Prontosil (forerunner of sulfanilimide)	Gerhard Domagk	German.
1937	Nylon	Wallace H. Carothers	American.
1938	Fission of uranium	(Lise Meitner Otto Hahn Fritz Strassman	Austrian. Do. German.
1939	Analysis of atomic fission	(Niels Bohr Henry Focke	Danish. German.
1939-40	Radar rangefinder	Admiralty Signal Establish- ment.	English.
1940?	Carried forward Sir Alexander Fleming's dis- covery of penicillin.	Ernest B. Chain	Da.
1941	Plutonium discovered	Sir Howard W. Florey E. M. Macmillan	Do. Do.

Mr. KIRWAN. The select committee proposed in this resolution will have a job on its hands. It can accomplish a lot. I mean a lot. It can give aid to the Appropriations Committee. We need all the help we can get in assuring all this research is necessary and effective and that none of the money is wasted. That is why I am trying to tell you here today that this can be a grand and useful committee. It does not have to be the biggest committee in the

world. Our experience on the Appropriations Committee is that you do not need a large, permanent investigating staff, as qualified individuals can be obtained on a reimbursable basis from agencies as needed to make special investigations. For example, we are now recruiting a small, temporary group to make a special review of water research.

This select committee, if successfully set up, can do a job, and if ever there was a time to do a job it is now. Just stop and think that the inventions I mentioned were accomplished by private initiative and financing. But not today. Today the word is "research" and that word this year is worth \$15 billion. That is what that word in the 1964 budget is worth. Yet most everything down through the centuries was discovered, no matter what it was, with little, if any, Government financing. They gave Perry a couple of dollars and a couple of dogsleds and told him to go out and find the North Pole. He did it. Today they would initiate a couple of legislative bills to start somebody to the North Pole. We gave a couple of hundred thousand dollars to Byrd to send him down to Antarctica and they hollered because he was expensive. He did a lot of good down there. Look at the cost today. Oceanography alone is up to \$156 million and the 10-year plan calls for \$350 million by 1972.

So there is a real need for this new committee to be set up. I hope that you pick a good committee. Pick somebody who has time to devote to this committee. When we do that they go out and do a job, just stop and think of the value that may come from its work. There is room for us all, if we are going to survive, to do our bit and do our job. That is why I am asking you here this morning, representing Mr. Cannon of the Appropriations Committee, to set up this committee and see if something cannot be accomplished to stop the likes of oceanography which was only \$24 million in 1958 and the plan is to go to \$350 million by 1972. If you do your job and the other Members of Congress do their job, and the department heads do their job, perhaps we can keep this thing in balance. I have two different dollars over in my office. One is a dollar of 1907. I was working at that time for the United States Steel Co. and they hadn't a quarter. I was paid in script. So was every man who worked for them in that depression of 1907. The other is a dollar from Cuyahoga County, which embraces Cleveland. That was in 1932. They also paid in script. Those days can come again unless we down here get together and stop a lot of this foolish waste and spending of money. Certainly we have to have research to keep abreast with the rest of the world, but we do not, for example, have to have 17 agencies in the research of water. It can only result in overlap and duplication of effort. Perhaps 3 or 4 agencies should have responsibility for water research, but 17 just doesn't make sense.

It is a privilege for me to appear before you representing Mr. Cannon. I am glad to be here this morning.

Mr. COLMER. Thank you, Mr. Kirwan. I just wish that all the Members of the Congress, both branches of the Congress, could have heard your very interesting and factual statement here this morning.

Mr. BROWN. Mr. Chairman, I would like to amend that.

Mr. COLMER. Maybe we can do something about it.

Mr. BROWN. I wish every American citizen could have heard Mr. Kirwan this morning because I think he said a lot of things that need to be said time after time, over and over again in a lot of places in this country. We are proud of you.

Mr. COLMER. I accept the gentleman's amendment.

On the question of the committee I wonder if the gentleman, who has had so much experience as a member of the Appropriations Committee and is so familiar with these things, would agree that in addition to the compliment of the committee, the members appointed on it to do the job if really the final success or failure of this committee, if it is set up by the House, would not depend upon also the quantity of the staff. In other words, as pointed out here by Mr. Delaney and others, this is a tremendous undertaking.

Members of Congress are very busy. The staff is going to play a most important part in this.

Mr. KIRWAN. Yes, very much so, for it will be a tremendous job. Thank you.

Mr. COLMER. Are there any further questions?

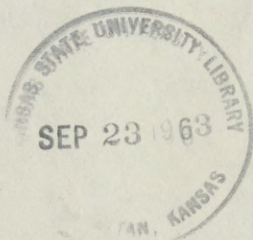
If not, thank you very much, Mr. Kirwan.

This completes the hearing.

The committee will adjourn until the call of the Chair.

(Whereupon, at 12 noon, the committee adjourned to the call of the Chair.)

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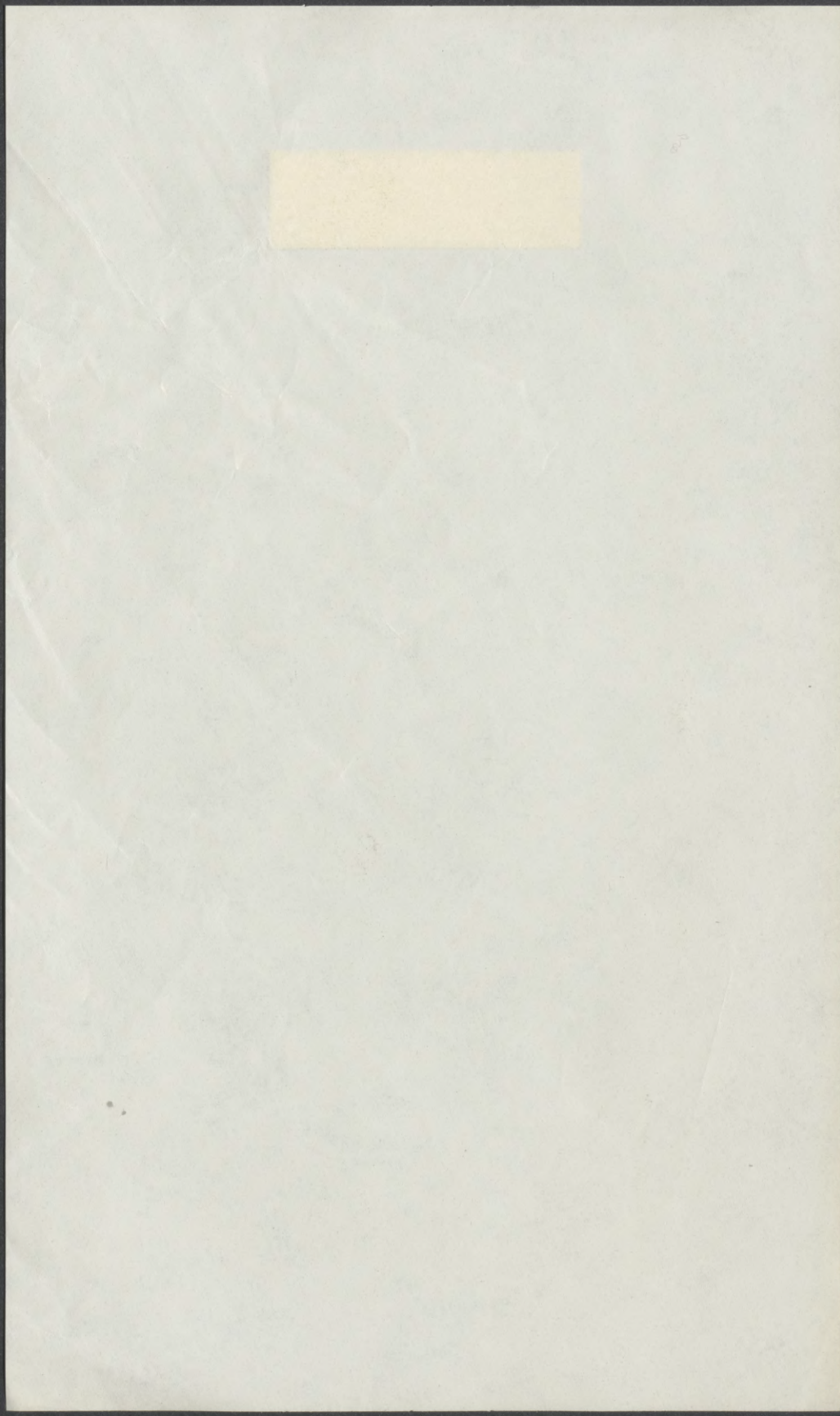


Mr. [Name] [Title] [Address] [City] [State] [Zip]
 Dear Mr. [Name]:
 I am writing you in response to your letter of [Date] regarding [Subject].
 I am sorry that I cannot give you a more definitive answer at this time.
 I am sure that you will understand my position.

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